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N A T U R A L H I S T O R Y,

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O F T H E

E A S T I N D I E S.

TRANSLATED FROM THE LATIN OF

J A M E S B O N T I U S,

Physician to the Dutch Settlement at Batavia.

TO WHICH ARE ADDED

A N N O T A T I O N S

By A P H Y S I C I A N.

L O N D O N:

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P R E F A C E.

TH E R E never was a time when the peculiar circumstances of foreign climates so much merited the attention of a commercial people, as, at present, the Natural History and Diseases of the East Indies. These being professedly treated of by Bontius, it was apprehended, that a translation of that valuable author would be a work of public utility, calculated, not for the benefit of the faculty alone, but of all those who either reside in, or visit the oriental countries, as containing the most important precepts for the prevention of endemial

diseases, as well as the method of cure.

Concerning the translation it is sufficient to say, that no other liberty has been used, than lopping off a few trifling redundancies, and changing the arrangement of the subject into an order which appeared more natural. The freedom of the translator might perhaps have been extended, with indulgence, to the alteration of some prescriptions and theoretical opinions, which may now be regarded as obsolete. But as most of the medicines are indigenous in the Indies, it seemed more eligible to retain them on the authori-

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ty of the author, than sacrifice his faithful observations of their effects, to the temporary and inconstant modes of practice. With regard, however, to the few obsolete opinions which occur, though these also are preserved in the translation, they are remarked in annotations. And in order to render the publication more complete, an account is added of the nature and cure of such diseases as have been omitted by the author.

The whole is submitted to the public, as a work, in many parts, no less curious and entertaining, than faithful, useful and important.

DEDICATION.
TO THEIR
EXCELLENCIES THE DIRECTORS
OF AFFAIRS IN THE
EAST INDIES.

ALMOST three years are now elapsed, honourable gentlemen, since first I devoted my medical labours to your excellencies; which on my arrival in your Indies, I began to exert with activity, to demonstrate my endeavours, that the emoluments you have conferred upon me should be productive of public advantage. What observations, therefore, I made in my practice through the day, these at night, when more disengaged from cares, I committed to paper, and now make public, as a small return for the many obligations I lie under to your excellencies, and which I never can fully repay. From the observations which appeared to me the most important, I have compiled this method of cure, and described the diseases

which I found to be popular and endemic. Nor have I delivered any curative precept, the utility of which I dare not boldly affirm to have been first ascertained by experience. Let others who please write of miracles on hearsay ; I shall only propose to your attention what I have seen with my eyes, and what my judgment, such as it is, has been repeatedly convinced to be true. Which as none of our Batavians, as far as I know, has performed, nor even so much as attempted before me, it is highly proper that I, who come the first upon the stage, and have to dread the attacks of the malevolent, should crave the patronage of your excellencies, by which, as a shield, my labours may be protected. And what more indulgent patrons could I hope to find, than you, honourable gentlemen, who have hitherto loaded me with your favours, and, if continuing your partiality, will give me spirit and vigour to attempt undertakings more arduous, and deserving of your regard ? And if I am spared, I hope to shew myself not unworthy of the sacred dispensation of physic intrusted to my care. In the mean time, honourable gentlemen, deign to accept this small paper present, all I can afford, with that disposition in which I have inscribed it to your excellencies, and in which I still sincerely lay myself and all my services at your devotion. Which I shall

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make farther appear, when I have finished my commentaries on the shrubs, trees and herbs which grow in Java: and shall show that others, whose names, however, are celebrated among the learned, have treated of this subject too superficially. Farewel! honourable gentlemen, and may Almighty God long preserve you for the prosperity of your growing Batavia, and the glory of the Indian empire,

NEW BATAVIA,
Nov. 19, 1629.

Your Excellencies most

devoted Servant,

JAMES BONTIUS.

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C H A P T E R I.

*Of a particular kind of Palsy, called, The
Barbiers.*

THE inhabitants of the East Indies are much afflicted with a troublesome disorder which they call the Beriberii (a word signifying a sheep). The disease has, probably, received this denomination on account that those who are seized with it, from a tottering

of the knees, and a peculiar manner of walking, exhibit to the fancy a representation of the gait of that animal. It is a species of palsy, or rather a tremor: for, at the same time that it impairs the sensation of the feet and hands, and sometimes even of the whole body, it induces a trembling. The principal cause of this disease is a thick, viscid, pituitous humour, which seizes the nerves in the night, when people, after being fatigued by the heat of the day, unwarily throw off their bed-cloaths. It is more especially the product of a rainy season; and such is constantly the state of the weather in this climate from the beginning of November till May.

In this disorder, the limbs are lengthened, not shortened, the phlegm insinuating itself into the joints so as to relax the nerves and ligaments. In general, the disease invades slowly: but upon a person's drinking a large draught of the *Palma Indica** when he is heated, the attack of it is, sometimes, extremely sudden; in the same manner, as we have observed in our own country, that when people had drank immoderately of beer or

* The cocoa or cocker-nut-tree, whose nuts contain a milky liquor of a cooling quality, much drank of by the Indians.

whey, when heated by running or any other violent exercise, they have incurred the greatest danger, and even death itself.

Among the chief symptoms of this disease, is a lassitude of the whole body. The motion and sensation, especially of the feet and hands, are languid and depraved ; and, for the most part, a titillation is felt in these parts, similar to what seizes them in cold countries in the winter ; but with this difference, that the sensation in the Barbiers is more painful. The speech is, sometimes, so much obstructed, that the patient can scarce pronounce a syllable articulately : which happened to myself in this disorder, when for a whole month my voice was so weak, that people, who sat close to me, could with difficulty understand what I spoke. Beside these, there are many other symptoms, which, however, all confirm the existence of a cold and viscid humour.

The cure of this disorder is generally very tedious ; the humour being difficult to resolve. For the most part, however, it is not mortal, unless it seizes the muscles of the breast and thorax, and thereby stop respiration. Lying in bed should be avoided as much as possible ; and the patient ought to walk, ride on horseback, and use all the harder sorts of exer-

cise ; but to run he is unable. Strong, and even painful frictions are highly necessary, which are very conveniently performed by the Bengal and Maldivian slaves. Fomentations and baths made of the noble herb *Lagondi**, are also extremely advantageous. This herb resembles the water-pepper in the leaf, and is of a sweet and aromatic flavour. It is not so much used in medicine as camomile and melilot, but, in my opinion, it excels them in its discutient and resolving quality. The feet and hands ought to be anointed with the oil of cloves and mace, mixt, however, with the oil of roses ; for, when applied alone, they are too caustic, and easily erode the skin. Beside these, we have, brought from Sumatra, an excellent kind of naphtha, called, by the Indians, minjac tannah (oil of earth), which, like the naphtha known in Europe by the name of ol. petræ, springs out of the earth, or drills into lakes and rivers from the contiguous rocks. This oil is held in so much esteem by the barbarians, that the king of Achen, the most powerful prince in that island, has prohibited the exportation of it under capital punishment ; so that when any foreign vessel takes shelter on that

* Eastern Privet.

coast in stormy weather, it is common for the inhabitants to bring of it secretly to the ship under night. This oil, when rubbed upon the parts affected by the Barbiers, affords wonderful relief. It has a heavy smell, but not disagreeable*.

If the disorder is chronical and of long standing, nothing is more effectual than decoctions of china, sarsaparilla, and guaiac, which, by their mild and friendly warmth, attenuate the cold viscid humours, and discharge them by sweat and urine. During this course, however, proper purges should be interposed; among the best of which is the extract made of aloes and gamboge (vulgarly called, with us, gutta gambae) of which I shall afterwards give a description.

Bleeding is hurtful: for the fault lies not in the quantity, but the quality of the humours: and who knows not the blood to be the fountain of heat, and the treasure of animal life?

To complete the cure, medicines which promote sweat and urine, and strengthen the nerves,

* The genuine naphtha, or oil of earth, is esteemed one of the finest and most penetrating of all the bituminous species: but what is imported into Europe under that name, is said to be a composition of the expressed oil of the coconut, and medicated earths.

should be administered ; such as theriac, mithridate, &c. joined with proper exercise *.

* The Indians have a method of putting the patient into a hole dug in the ground, and covering him with sand up to his neck. This is performed in the middle of the day, and he remains there as long as he can bear the heat of the sand. Camphire and a decoction of guaiac-wood have been found beneficial in the Barbiers : but nothing is of so great advantage in the cure as a removal into another air ; without which expedient, notwithstanding the use of the most powerful nervous medicines, the patient generally continues paralytic for some months.

This disease is most violent and frequent on the Malabar coast, where, especially during the months of December, January, February, and March, it attacks those who unwarily sleep exposed to the land-winds, which issue every morning, about sun-rise, from the neighbouring mountains ; suddenly seizing them with a painful sensation in the periosteum of the arms and legs. In some persons the pain abates as the day advances, and the air becomes warmer : but in others it continues for a considerable time, attended with a weakness of the knees, and uneasy sensation in the calves of the legs and soles of the feet, especially on any attempt to walk. It is scarce ever cured by medicine till after the shifting of the monsoon, unless the patients can be removed to the coast of Coromandel, or to any place on the eastward of the Balagat mountains, where, by the change of air, they quickly recover.

As no mention of the change of air is made by our au-

CHAPTER II.

Of the Spasm.

THE disorder of the Spasm, almost unknown with us in Holland, is so common in the Indies, that it may be reckoned among the popular and endemic diseases of the country. The attack of it is sometimes so sudden, that people become in an instant as rigid as statues ; while the muscles, either of the anterior or posterior part of the body, are involuntarily and violently contracted. A terrible disorder ! which, without any primary defect of the vital or natural functions, quickly precipitates the wretched sufferer, in excruciating torment, to the grave ; totally deprived of the capacity of swallowing either food or drink. There are, likewise, other partial Spasms of the limbs : but these being more

thor, it is probable that the unhealthy climate of the country adjacent to Batavia, and the inconvenience of removing farther, had prevented him from trying the effects of emigration in this disease.

gentle and temporary, I shall not treat of them.

People affected with this disorder look horribly into the face of the by-standers, especially (as often happens) when the cynic spasm comes on ; and both the cheeks are drawn in convulsion towards the ears. A red and green colour is reflected from the eyes and face ; the teeth gnash ; and instead of the human voice, a rude sound issues forth of the throat, as if heard from a subterraneous vault ; so that to those unacquainted with the disorder, the person appears to be demoniac.

The cure of this disease ought to begin with plentiful bleeding * : after which, frictions and strong ligatures should take place ; as also embrocations of the oil of mace, mixt with the oil of anise or roses ; and lastly, the oil of turpentine and Indian spikenard, which the island Java produces in abundance. Large cupping glasses, without scarification, are likewise to be applied

* The practice of bleeding in this disorder, though apparently necessary for preventing the consequences which may arise from so violent and general a constriction of the muscles, is affirmed, from later experience, to be rather of prejudice than utility, unless the patient is of a plethoric constitution, or a fever supervenes.

to the neck, loins, shoulders, and breasts, by which a repulsion of the ferous and bilious humour will be made from the muscles and nerves.

If by these applications the violence of the paroxysm should abate, and the patient recover the power of swallowing, antidotes ought to be administered in a liquid form, which may correct the poisonous quality of the humours, and evacuate them by urine or sweat. Such are the lapis bezoar, rasura cornu rhinocerotis, mixed with theriac, mithridate, &c. Emetics, likewise, are then to be taken, of infusions of gamboge, hepar antimonii or crocus metallorum. In a word, this is a disease so rapid, acute, and dangerous, that it admits of no procrastination, and every possible method of cure should be carried into immediate experiment. But if the disorder increases, or continues so violent, that the patient is incapable of deglutition, the belly is to be opened by clysters of the most stimulating kind, such as the following :

R

Herbæ lagondi dictæ

Abutali Avicennæ

Bismalvæ āā m. i.

Sem. Anisi

Fœniculi

Cumini

Anethi āā ℥ii.

Coque in q. f. aq. fluvii, & colaturæ, ℔ i. Adde

Pulv. colocynthidis ℥fs.

Sal. ammoniaci vel nitri ℥i.

Electar. R. Bontii (infra descripti) ℥i.

Sem. ol. anethi ℥iii. m. f. Enema.

The person is afterwards to be anointed with the oils above mentioned, and the naphtha of sumatra, or minjac tannah. Baths, likewise, and fomentations are to be made of the herb lagondi, and the leaves of a shrub called davullontas, which grows to the height of a man, with a leaf divided in the edge, and in flavour nearly resembling balm. These leaves, by an anodyne and specific kind of quality, are peculiarly adapted to this terrible disorder, and assuage the racking pain which arises from the contraction of the nerves*. The lapis and sal prunellæ, taken in-

* Besides the herbs here mentioned, the ingredients commonly used in Europe for emollient fomentations, with the

wardly, are incomparably useful; evacuating the bilious matter by a plentiful flow of urine, and gently cooling the blood where any feverish heat is attendant. Above all, particular regard is to be had to the violence of the pain, which is so urgent a symptom, that anodyne applications are of more immediate necessity, than those which affect even the primary cause of the disorder. For that purpose the laudanum quercetani is extremely proper, as likewise philonium sine Euphorbio, but chiefly the extract of saffron, which shall afterwards be described. Some, perhaps, may insist that these remedies ought not to be used, as being injurious to the nerves by their stupifying and narcotic quality: but however specious that argument may at first sight appear, it is absolutely void of foundation: for, besides that the great heat of the climate authorises the use of narcotic medicines, it is certain, that without recourse to them, in cases of such urgent extremity, the patients could not possibly survive. Add to

addition of theriac, have been experienced highly advantageous; and even preferable to the *semicupium*, though that has been strongly recommended by some authors.

It is almost unnecessary to remark, that fomentations ought commodiously to precede the use of ointments.

this, that the opiates which we use in this country, are so duly prepared that they may be safely administered even to infants : and in fact, were it not for these valuable medicines, we might abandon every physical application in all the hot diseases of this country : which affirmation, though it may appear unwarrantable to the unexperienced in such practice, I am confident, on future observation, will be universally acknowledged to be just *.

In regard to the regimen, it is a matter of no great importance : for the extreme violence, and

* The unanimous testimony of modern practitioners confirms this assertion of our author ; the rectitude of which is so clearly ascertained by experience, as to justify the most resolute and liberal prescription of narcotic medicines that occurs in all physical dispensation. Authentic cases of the various spasms are recorded, wherein a scruple of opium has been administered in the space of twenty four hours ; which, though it suspended for a time, and a periodical repetition of it in the end overcame the disease, neither induced a stupor, nor procured an uninterrupted sleep of three hours. Musk likewise has been joined to opium with great success. And we are informed of a case of the opisthotonos at Haslar Hospital, where opium and camphire, laid to the feet, instantly and repeatedly removed the spasm, which always returned with its former violence when the application was withdrawn.

rapid progress of the disease supercede all deliberate procedure : but when the rigor of the paroxysm begins to abate, broths made of fowls, kid, and veal, should be used, wherein cardamoms and tamarinds, produced abundantly in java, are boiled, which will serve both for food and medicine*.

* It deserves to be remarked, that the practice recommended by our author in this chapter, is, upon the whole, too general and indiscriminate ; and inapplicable to the various causes productive of the opisthotonos, emprosthotonos, tetanos, and locked jaw. The disease of the spasm is the most defective in its history of any which we meet with in this diligent and discerning physician. He has not related such facts and observations as were necessary to form his own opinion of the origin and nature of the disease, or might serve to direct the judgment of others. But it is not to be supposed, that he comprehends in his description any idea of those spasms which proceed from a wound, or puncture, and the rigor of extreme and sudden cold. It is manifest that the method of cure he prosecuted was intended for the expulsion of some acrid and irritating matter : and though his conception of its origin was vague and undetermined, nor supported by any principle which could account for its production, yet it seems not intirely destitute of plausibility, since it is known, that in the torrid zone young children are subject to the spasm from irritating humours in their bowels. But however imperfect our author's account of the spasm may

CHAPTER III.

Of fluxes of the Belly ; and first of the true Dysentery.

SINCE in this country, as well as with us, there are various kinds of fluxes of the belly, I shall here treat of each species ; tracing the situation of the parts affected, investigating the causes, and from these, and the observation of the symptoms, elucidate the method of cure. And first, of the true Dysentery, that horrible and destructive disease, which causes greater devastation in the Indies than any other malady whatever.

The true Dysentery, then, is an ulceration of the intestines with a perpetual purging, at first, mucous, afterwards bloody, and lastly, purulent, intermixed with the very substance of the bowels,

be reckoned, and however unsuitable or inadequate his general precepts to particular cases, it must be acknowledged, that, in his ultimate recourse to opium, he proceeded upon the most rational and auspicious principle, and has the merit of recommending a practice which experience confirms to be salutary.

with intolerable pain and griping of the belly. This disorder is partly induced by a warm and moist air : which leads me to remark the error of a pretty general opinion, that on account of the proximity of the equator, the temperature of this climate is hot and dry. Among many other arguments which might be advanced in refutation of this notion, one is unanswerable : which is, that steel, iron, and also brass, sooner contract rust or verdigrise, even in the driest season of the year, when not a drop of rain falls in this country, than in the wettest autumns in our own. Besides, the fruits here greatly contribute to the disease : which if a person is not extremely cautious of eating, and takes without rice, or bread and a little salt, he scarcely can escape the disorder : just as in France and Spain, where people, who eat much grapes without bread, are immediately seized with a Diarrhœa or Dysentery. The fruits here are these : the Indian fig, which the natives call bananas and pifang. Garcias ab Orta, and Prosper Alpinus, call it musa. Next, the duriones, jacas, ananas, cucumbers, water-melons, &c. of which a description may be found in Garcias, and Joannes a Linschoten. These, besides their being green fruits, are injurious to the temperament by their heat and humidity. Melons and cucumbers,

indeed, may be excepted from the former imputation, but they are highly obnoxious to the latter. But the principal cause of this disease, is the drinking an inflammatory liquor, Arac, which the Chinese make of rice and the holothuria, or what in Holland we used to call *quabben* or *quallem*. These holothuria have so pungent a heat, that the touch of them ulcerates the skin, and raises vesicles. Happy were it for our sailors that they drank more moderately of this liquor: the plains of India would not then be protuberant with the innumerable graves of the dead.

As to the cure, the common remedy is an infusion of rhubarb in decoction of tamarinds, to evacuate (as they say) and attemperate the acrid fluids. But it deserves to be remarked, that this remedy is not only often unsuccessful, but that sometimes it causes certain destruction, when the extremely acrid bile is luxuriant: and there is danger of its being irritated by the gentlest laxative, and driven with greater violence towards the seat of the disorder, to the incredible torment of the sick, and often his inevitable ruin. Add to this the extreme weakness which is frequently induced by the Dysentery, and rather requires restoratives than purging. Here, therefore, it behoves the physician to proceed with the greatest circum-

spection : and in that sentiment I shall now prescribe what I have found, from long experience, to be the most successful method of practice.

Let the common drink, then, be a decoction of rice, which the Indians call caudgie, with endive and succory : adding, likewise, the hart's tongue, or phyllitis, which grows plentifully here about the rivers, and at the same time that it strengthens the liver and intestines by its astringent quality, corrects the acrimonious and raging bile.

But if the severity of the pain should not admit of so slow a regimen, recourse must immediately be had to the extract of saffron, than which (I dare affirm) a more excellent remedy was never discovered by mankind ; and I am fully persuaded that it is the most perfect antidote against this disease, even when of a malignant kind. It is not my intention to enumerate a large tribe of medicines ; I would restrict myself to such as not only from their obvious qualities, but the congruity of their substance, are adapted to this cruel disorder : and these abound in this country. Those fruits which we call mangos, and are commonly pickled, are highly useful in this disease, on account of their acidity and astringency. When unripe, likewise, they are boiled with eggs, after the manner of the grapes in Holland : nor could a

person, though of the most exquisite taste, easily distinguish the difference. A preserve is also made of them, like that of our quinces, for which it is a substitute, and I question if not superior. For strengthening the bowels still more, the syrup of pomegranates newly taken from the tree, is of great advantage in the Dysentery; as are also the flowers of them preserved.*

* Various and violent methods have been attempted for the cure of the Dysentery; and after exhibiting a long and distressful course of emetic and purgative medicines, the general practice has at length conformed to the propriety of moderate evacuations. Bleeding being premised, or omitted, as judged necessary, a few grains of ipecacoan by way of vomit, at the beginning, with the occasional use of some gentle cathartic to carry off the acrid humours, and obviate the too astringent effects of the subsequent remedy on the intestines; we must subscribe, with our author and the judicious Sydenham, to the sovereign efficacy of repeated opiates, as the only advantageous resource. With these the bark is to be joined, in the state of convalescence; and we are informed that the use of the cold bath, in all hot countries, contributes greatly to a perfect re-establishment of health.

CHAPTER IV.

Of the Hepatic Flux.

THE Hepatic flux of the belly, though no less dangerous than the Dyfentery, is, however, not attended with symptoms equally severe: there never being an excoriation of the intestines nearly so considerable, and sometimes none at all. For in this case, the blood is generally discharged pure and unmixed, either on account of the retentive faculty of the liver being impaired, or the acrimony of the blood opening the mouths of the vessels per anastomosis, or lastly from its quantity distending the meseraic vessels, whence it is poured into the intestines, and discharged by stool; which latter kind is the least dangerous of all the hepatic fluxes, and often more formidable than hurtful. If the cause is an acrimony of blood, the colder decoctions should be used, made of the seeds of cucumbers, gourds, citruls, common pumpions, and water-melons, of all which there is here the greatest plenty. Of these likewise are made emulsions, electuaries, and powders, of great utility in this disorder. For the revulsion of the peccant

humour, cupping-glases, with scarification, should be applied to the loins and haunches, and preserves of the above-mentioned diuretic fruits be made use of in diet.

But if the blood is in too great quantity, the median vein should be opened without delay, proper regard, however, being had to the strength of the patient: because the people of this country, and especially the sick, on account of the heat of the climate, and the constant evaporation of the spirits, are disposed to weakness. For this reason, I never advise bleeding unless in cases of absolute necessity, as our bodies, being softened and relaxed by the heat, do not easily bear that evacuation*. It is otherwise with the strong constitutions of the Portuguese and inhabitants of Java, who being inured to heat, can admit of bleeding in great quantity. I speak from experience. In every extremity, however, we must have recourse to the extract of saffron, as the anchor of hope: of which valuable medicine I shall here subjoin the composition.

R

Opium electissimum

Sanguis draconis.

Gummi Benzoin.

* The author means the Dutch.

Croci oriental. āā partes æquales

Ambraë Japonicæ seu nigræ, partem tertiam;

Conjice in vas vitreum oblongi, & angusti colli: adde aceti fortissimi ex vino, ut materiam seu massam in fundo superemineat, tres, aut quatuor digitos. Vitrum bene clausum exponatur radiis solaribus, qui nobis hic, propter fervorem, sunt instar ignis chymici; colata hæc omnia & expressa fortiter, eodem sole inspissentur in consistentiam extracti.

The dose of this is from six to nine grains, taken in the form of a pill, or dissolved in a spoonful of wine, or any other convenient liquor. It ought to be given chiefly at night, at which time, I have observed, that all the diseases of the bowels are exasperated in this country.

I designedly pass over the Diarrhæa, and Lientery, or that flux which commonly succeeds a long continued Dysentery, as they are sufficiently known in our country, and the cure is much the same as in the former, and often consists only in strengthening the stomach and intestines. Of the other fluxes, however, I shall give an account.

CHAPTER V.

Of the Tenesmus.

THE Tenesmus is more dreaded in this country, than the Dysentery, on account of the extreme uneasiness which attends it; and indeed, when it precedes that disorder, it is generally mortal; because all diseases that increase by succession, are likewise increased in virulence. But if it comes after the Dysentery, the cure is more easy, as, then, it is only the remains of that disease, fretting the parts affected.

A Tenesmus is an ulceration of the intestinum rectum, with constant pain and a desire of going to stool, when first, a little mucus, mixt with some drops of blood, and afterwards purulent matter is discharged. Whence our people very properly call this disorder *den druyploop*, because the peccant matter comes away by drops. When pregnant women are seized with the Tenesmus, they generally miscarry, or are delivered before the due time. For the uterus, being situated between

the anus and the bladder, is excited by the continual irritation to expel the foetus prematurely. For the same reason, a procidentia ani is frequently brought on, as are also the hæmorrhoids; and if the disease continues long, a dropfy, as I have often observed. Whence follows a decay of the body, and, after excruciating torments, death.

As this disorder extends no farther than the intestinum rectum and anus, the cure of it consists chiefly in clysters, fomentations, and baths, prepared of emollient and detergent herbs. Such are the leaves of davullontas, and lagondi, above-mentioned, marsh mallows, yellow mallows, the seeds of cummin, anise, fennel, &c.

When by the use of these the ulcer is somewhat cleansed, and the pain become more easy, we ought to have recourse to astringent fomentations, especially if there is a procidentia ani. The materials for that purpose are harts-tongue, and the leaves of tamarinds, together with the fruit, and the leaves of bilingbing, mentioned above, which, in shape and magnitude, resembles those young cucumbers called, by the Portuguese and Italians, agureas; than which a more acid fruit, the earth, I believe, never produced. For, if a person eats of them after his teeth have been set on edge by any other acid, the sensation is immediately obli-

terated ; in the same way as an extreme acute pain destroys the perception of one less. I have principally mentioned these remedies, for the sake of informing curious inquirers, that where the diseases above-spoken of are endemial, there, the bountiful hand of Nature has profusely planted herbs whose virtues are adapted to counteract them. I forbear insisting on the medicines which are known in our own country, as my chief intention is, to instruct those lovers of physic, who either now practise with me, or shall succeed me in this remote part of the world. And would to God that the disease, by which I have been confined these four months, still permitted me, as for long after I arrived here, to roam thro' the delightful circumambient woods of Java, and attain a more perfect knowledge of the many noble herbs which are to be met with in this country ! In a future volume, however, I shall give the names of a great number of trees, shrubs, and herbs, that it abounds with. I shall, likewise, give you an account of birds and fishes (a subject I always was fond of) which are caught here ; explain to you their nature, and shew what are their peculiarities, or in what they agree with those of our own country. In the mean time, I shall conclude this chapter with that golden sentence of Celsus, Lib. iv. c. xvi.

“ As in all fluxes of the belly, so especially in this (the Tenesmus) it is necessary that a person go to stool, not from inclination, but necessity, that this very delay may inure the intestines to a habit of sustaining their burden.”

CHAPTER VI.

Of the Cholera Morbus.

BESIDES the diseases above treated of as endemic in this country, the Cholera morbus is likewise extremely frequent, to the account of which malady I shall devote the present chapter.

In the Cholera, hot, bilious matter, irritating the stomach and intestines, is incessantly, and copiously, discharged by the mouth and anus. It is a disorder of the most acute kind, and, therefore, requires immediate application. The principal cause of it, next to a hot and moist disposition of the air, is an intemperate indulgence of eating fruits; which, as they are generally green, and obnoxious to putrefaction, irritate and oppress the stomach by their superfluous humidity, and produce an æruginous bile.

The Cholera might, with some degree of reason, be reckoned a salutary excretion; since such humours are discharged in it as if retained would

prove prejudicial. However, as by such excessive purgations the animal spirits are exhausted, and the heart, the fountain of heat and life, is overwhelmed with the putrid effluvia, those who are seized with this disorder generally die, and that so quickly as in the space of four and twenty hours at most.

Such, among others, was the fate of Cornelius Van Royen, steward of the hospital of the sick, who being in perfect health at six in the evening, was suddenly seized with the Cholera, and expired in terrible agony and convulsions, before twelve o'clock at night; the violence and rapidity of the disorder surmounting the force of every remedy. But if the patient should survive the period above-mentioned, there is great hope of performing a cure.

This disease is attended with a weak pulse, difficult respiration, and coldness of the extreme parts; to which are joined, great internal heat, insatiable thirst, perpetual watching, and restless and incessant tossing of the body. If together with these symptoms, a cold and foetid sweat should break forth, it is certain that death is at hand.

The first intention in the cure of the Cholera, is to mitigate the excessive sharpness of the hu-

mours : which is chiefly to be accomplished by astringents, and such medicines as not only strengthen the stomach and intestines, but, at the same time, by moderately cooling, restrain the fury of the rioting morbid matter. The most excellent medicine for these purposes, is the syrup of billinbing, formerly recommended ; as also the fruit of the same plant preserved, with the addition of saffron ; and likewise the syrup of the recent juice of lemons. Moreover, there grows in Java the pseudomyrobalanus, excellently adapted to this disorder, and resembling, in form, the bellericos. It is brought to market in great quantities by the negroes. This is the only species of myrobalans that is endowed with an astringent, and not a laxative quality ; whence the preserve, made of it, is of the highest utility, not only in the Cholera, but in all immoderate fluxes of the belly. Other medicines for the purpose are, cornu cervi ustum, lapis bezoar, rasura cornu rhinocerotis, and margaritæ præparatæ.

If these remedies should not answer the intention, the extract of saffron, so often referred to, must again be called to our assistance ; both that sleep may be procured, which, on account of the excessive weakness, is now absolutely necessary, and that the turbulent humour being

pacified for a time, recruited nature may rise up victorious. Those who die of the Cholera generally expire in convulsions.*

* In the treatment of the Cholera morbus, the practice of our author is similar to established prescription, only that for attemperating the acrimony of the humours, he makes no mention of dilution by drinking and injections, which, if the disorder is not arrived near its last stage, may be advantageously administered before the exhibition of opiates.

C H A P. VII.

*Of the Diseases of the Liver : and first of Obstruction,
and Inflammation.*

NONE of the bowels, the intestines excepted, is, in this country, more often diseased than the liver : which, independent of other causes, is solely by the drinking of that destructive arrac, not only altered in its temperament, but corrupted in its substance. For, when the intoxicated drinkers are all a-glowing with the pernicious draught, they swallow down immense quantities of water into their stomachs, to extinguish the heat ; then lye along the ground like beasts, or stretched on the decks of the ships, expose themselves to the dews, which fall copiously here, after the second or third hour of the night. By which means they receive into their bodies the noxious vapours arising from the earth, and lay the foundation of obstructions in the liver.

In this disorder, a tense weight, and obtuse pains are felt in the right hypochondrium. The respiration is difficult, on account of the distended

bowel drawing down the diaphragm, to which it is connected by a ligament. If this infarction continues, the stagnating humours easily become putrid : whence arises a fever, and an inflammation of the liver, with acute and pungent pain. The fever becoming ardent, intolerable thirst advances, attended by a redness of the face, and difficulty of breathing, which I observed above to be the natural effect of the obstruction. These two affections, namely, obstruction and inflammation, being so closely connected, that the one generally produces the other, I shall treat of the cure of both in this chapter, beginning, as most proper, with obstruction.

Great care ought here to be taken not to use too hot medicines at first, lest the capillary vessels of the liver should thereby be farther obstructed, and we fall into the proverbial absurdity of adding fuel to the flame. Temperate and gentle deobstruents, therefore, are the medicines properly adapted. Such are those called anodynes, as the seeds of anise, fennel, and cummin, with which the country supplies us. Next, the roots of a certain kind of aromatic grass, in flavour resembling avens. To these add (what ought to have been mentioned first) the true *calamus aromaticus*, which *Garcias* *ab Orta* calls the food of the camels, which grows

here in great plenty, and with which the inhabitants season their meat, especially fish, in not an unsavory manner. Other medicines should also be used, which together with a mild heat possess a diuretic quality, that this useful and important bowel may be freed from infarction.

The offending matter being now prepared, it is not to be evacuated all at once, but drained off by degrees. The most suitable medicines for this purpose are tamarinds, and the pulp of the *cassia fistularis*, to which may be added a little turpentine, properly boiled, and afterwards reduced into a powder. It is amazing how mildly these medicines carry off the morbid humours, both by stool and urine. If any thing stronger is desired, a drachm of rhubarb may be added, and the whole mixed together in the form of a bolus.

When from the increase of the fever, and a more vehement and pungent pain, you find an inflammation advancing, forthwith bleed plentifully, according to the strength of the patient. Order the diet, syrups, and conserves, already so often mentioned, and which for that reason I decline to repeat. A preserve is here made of the fruits which we call *poma moris* (love apples); the Italians give them the name of *bella dona*, and

the Portuguese of poma d'oro. It is certainly a species of mandrake. The Chinese cultivate it in their gardens, among their fallads, and eat it toasted, with pepper and vinegar. Tho' this plant is endowed with great frigidity, yet, in this hot climate where the bile is acrimonious, it gives a salutary coolness to the liver, and the organs with which it is connected. The tunny, likewise, is pickled with vinegar, pepper, and aromatics. This the Indians call by the common name of achar.

The hypochondria, the right especially, ought to be anointed with an excellent unguent made here by the Indian women, of which the principal ingredients are, the roots of turmeric, which the natives call borborii, and whence the whole composition has received the same denomination ; the saunders, of every kind, with the addition of camphire, and the oil of the cocoa, or if you will, that of roses, which is brought to us from Persia. All these are beat in a marble mortar to the consistence of an ointment.

With this oil, both men and women anoint their bodies, to preserve them from the injuries of the heat. And because on account of the turmeric it is of a yellow colour, the people seem as if they were tinged with saffron. The ointment,

however, is of a very agreeable flavour, and beneficial to the brain. For the same purpose we make an oil of the flowers of a certain tree that grows not very high, and bears leaves like those of the peach-tree. The flowers are of a dilute green, which the Dutch call *zeegroen*, and appear at first sight to be rather a cluster of leaves: but the stems that are in the calyx, or cup, in the same way as in the roses, confirm them to be flowers. The name given by the inhabitants both to the tree and flowers, is *sampaga*, and among them they are in the greatest esteem: for, of all the Mahommedans, the Indians are most remarkable for the love of an agreeable flavour: so that you never can see a woman in the streets, who has not these, or other such flowers, stuck into her hair, in order to render her more agreeable to her husband, or her lover. But to return to our subject. If, as frequently happens, the pain in the liver and ligament is intolerably violent, we must for a little suspend our attention to the cause, in order to mitigate that symptom. This will be best performed by the inestimable extract of saffron; by which alone, I declare I have cured great numbers; nature recovering strength by the favourable truce, and expelling the morbid matter by stool, urine and sweat.

C H A P. VIII.

Of an Imposthume in the Liver, and the cure of it.

IF the inflammation of the liver should not yield to antiphlogistic and discutient remedies, a miserable disorder follows, namely, an Imposthume; with which if the parenchymous part of the bowel be affected, the malady is incurable, and therefore needs not be treated of. But if the purulent matter be collected between the membrane furrounding the bowel, and its substance (as often happens) the only chance of recovery is in opening the imposthume; which ought to be performed in this manner. First, let a potential cautery be applied to the region of the liver, so that the eschar may only penetrate the muscles of the abdomen, and make no impression on the peritonæum. Then, by means of a knife, make a small aperture in that membrane, thro' which let a concave silver instrument be introduced, such as is used in the operation of lithotomy. Afterwards, let the incision be sufficiently dilated,

and immediately the membrane furrounding the liver will come into view, distended with its contents. On being pierced, a sanious humour, resembling the water in which flesh is washed, will flow out, which the less foetid it smells, affords greater hopes of a cure. The wound is then to be deterged, by moderately drying and cleansing applications : such as flor. rosar. cortex granator. mel rosar. &c. and afterwards to be healed. In the mean time, the patient is to abstain from all purging medicines, and only to make use of strengtheners ; such as conserv. rosar. with the powder of red saunders, to which may be added cornu cervi ustum, and rasura cornu rhinocerotis, which is found plentifully here in the woods ; margaritæ, & corallium rub. præparatum ; syrups, conserves, and preserves of billimbing, mangas, and juice of lemons ; all which, by cooling and strengthening the liver, afford great relief. When the patient is weak, as is generally the case, the lapis bezoar ought to be freely used.

CHAPTER IX.

Of the Dropsy, a disease very frequent in the Indies.

I Have said very little of the imposthume in the liver : because the cure is not to be performed by words, but the hands of a dextrous surgeon, directed by a prudent physician. I come now to the dropsy, a most frequent disorder in these places.

It is unanimously the opinion of the learned, that the dropsy owes its origin to a cold temperament of the liver, which often proceeds from a chronical obstruction*. This obstruction arises

* The doctrine of the Temperaments was a prevailing notion in the age in which this was written. As it had derived its origin from the venerable authority of Galen, it was long maintained by succeeding physicians as sacred and unquestionable. It is, therefore, no imputation on our author, that he was not exempted from a prejudice of so universal and prescriptive dominion, or discovered not an error which lay concealed till the future dawn of more genuine philosophy. His natural discernment, however, led him to see in many things the futility of the scholastic Jargon : and though he implicitly adopted the reigning theory of his predecessors and co-temporaries, yet in practice he renounced all authority ; acknowledging no other guides than observation and facts, and following no dictates but those of nature.

from unwholesome diet, and the use of the fruits formerly mentioned. Hence sanguification is vitiated (for the liver is the elaboratory of the blood). For, whilst the liver cannot convert into blood the chyle which is brought thro' the meseraic veins, it produces in place of it that ferous, and watery humour; and, as in our own country, either the whole body swells, or the abdomen, and that, either with wind, or ferous humours. Whence, these three celebrated species of the Dropsy, Anasarea, Ascites, and Tympanites, are, alas! too frequent in the Indies.

The part principally affected is that noble bowel, the liver. A dry cough attends, with a difficulty of breathing: because the liver, by its increased weight, draws down the diaphragm, and hinders expiration. A slow fever for the most part comes on, and the urine on account of crudity and a weakness of the natural functions, is thin and pale. There is likewise a lassitude of the whole body; and a perpetual thirst, by reason of the saltness of the humours.

These are the chief signs of a dropsy: and if I omit mentioning some other more inconsiderable symptoms, it is because my intention is not to form a physician, but to teach the most salutary practice in this country to those who have already

studied the art. Before I enter upon the cure, it is proper to observe, that, in general, the dropfy is more easily vanquished here, than in our own climate (Holland). A prudent phyfician, therefore, will be careful not to hazard his reputation, nor rashly pronounce a difeafe mortal, which, to his great fcorn, may in a little time be cured, by old women, or even by nature itfelf, with only a regard to proper diet.

The cure confifts in preparing, and evacuating the peccant humour, and correcting the temperament of the liver. The diet ought to be fuch as affords good nourifhment, as hens, or chickens, which are here the moft common kind of birds; and thefe fhould be boiled, rather than roasted*. But amongft the other kind of fowls, thofe are preferable which have black flefh; for the inhabitants have for a long time experienced them to be endowed with a diuretic quality. In the

* This precept was founded upon an erroneous opinion, that the humours to be difcharged, required preparation, which was fupposed to be beft performed by medicated broths and drinks. Such practice, however, is defervedly exploded with the theory whence it arofe. Though efficacious diuretic medicines may be adminiftered in a liquid form, it is certain that in general the moft proper diet for hydropical perfons is that of the dryer kind.

broths, should be boiled the seeds of dill, and fennel, and the roots of succory, together with marjoram, and common basil, with all which we abound. The flesh of goats, prepared in the same manner, will likewise serve both for food and physic. But nothing is so efficacious as the daily use of a decoction of china, and sarsaparilla, with the roots of turmeric, and the herbs called devil's bit, and scabious, which the Malaican midwives extol even to extravagance. The decoction of guaiac wood, with the bark of it, is also very useful.

When the humours are thus prepared, our next endeavour must be to evacuate them by strong cathartics, lest by employing the more mild, we should rather stir than discharge the peccant matter. Among those, the most excellent is the extract of Gamboge, which I prepare thus :

R

Aloes socotrinæ

Gambog.

Gummi ammoniaci āā partes æquales.

Aceto vini acerrimo dissolvantur: pone in vase vitreo ad solem fortiterque, colatum exponatur rursus, donec contraxerit consistentiam massæ pilularum.

The dose of it is from half a drachm to a drachm.

The *cucumis asininus*, or wild cucumber, grows also here in great plenty; whence I have sometimes made the elaterium, and given from a scruple to half a drachm of it frequently, with great success. The *extractum esula*, likewise, is very advantageously administered, from ten to fifteen grains in any convenient liquor. And as I have often mentioned the gamboge, and the *esula*, or spurge of Java, I shall give a description of each.

There grows here in the woods a species of the spurge, that rises to so great a height as to equal, or even overtop large trees, to which it clings like the ivy. Its thickness is about that of a man's arm. On wounding the stem of this plant, there flows forth a great quantity of milky juice, which, being collected, and reduced to the consistence of an extract, is preserved for use.

The plant which produces the gamboge, or those yellow tears which you have in our country, is so much like the former, though it grows not quite so high, that there is almost no other difference in the juices of both, than the colour. This plant, like the aloes, grows in great quantity in Cambodja, a country bordering with China, whence it has got its name.

I shall say nothing here of the paracentesis, or perforation of the abdomen, not that the operation is not frequently performed in this country, but that all expert physicians and surgeons are sufficiently acquainted with it. Besides, my intention is only to treat of such methods of cure as are most common in the Indies : and it is more my ambition to be a good practitioner, than absorbed in verbal theory, loftily to declaim on the nature and cure of all diseases, in idle and scholastic retirement, only acting the physician upon paper : and I dare affirm without presumption, that if physicians and surgeons shall pursue the method I have recommended, they will not repent of the consequence.

The ferous humour being mostly evacuated, that the patients may not relapse (which, without proper care, is, in the Indies, not only frequent, but irrecoverable) the remains of the disease ought to be entirely eradicated, and the liver as much as possible restored to its former temperament. For which end, besides the common sudorific antidotes, theriac, mithridate, &c. a light decoction of sarfa, china, and guaiac is to be persisted in for some days, which in this, as well as other chronic diseases, is by far the most excellent and certain remedy.

C H A P T E R X.

Of the Jaundice in the Indies.

TH E jaundice is here deservedly ranked among the diseases most frequent in India ; as it is not only a primary complaint, but also either accompanies, or follows other disorders, such as an inflammation, scirrhus, and imposthume of the liver : and being then symptomatic, and arising from the violence of a disease, it is generally mortal. But of this species of jaundice, I shall forbear treating ; as the cure of it is connected with that of the disorder on which it depends. There is also another species of jaundice, when the gall-bladder being obstructed, its contents are not transmitted into the intestines ; whence the fæces appear white, but the urine is so highly saturated as to stain linen with the colour of saffron. For, the bile returning to the liver, is, by means of the veins and arteries, distributed with the blood thro' the whole body, tinging the skin yellow, and manifestly discovering itself in the eyes. This is the disorder of which I am now to treat.

This jaundice is so rapid in its progress, that it rises and disappears in a few days : which happened some months ago, to two learned and reverend gentlemen, my particular friends, Mr. JUSTUS HEURNIUS, and Mr. ABRAHAM de ROY, who after taking a few doses of a sudorific medicine, and cordials, recovered very soon. The more chronic kind of jaundice, however, requires greater application to the cure, as the obstruction is more difficult to overcome. Besides, it frequently produces a delirium, and phrenitis, the bile being translated to the brain ; and if neglected, an inevitable dropsy is the consequence. The same medicines are to be used in this jaundice, as were recommended in the obstruction of the liver. The inhabitants alledge that the little birds called chlorides (the Latin term for green-finches, or Canary-birds) have a specific virtue against this disease. The decoction of china, and sarsaparilla is of great advantage, by supporting a copious sweat : and for the same intention, the following is highly useful :

R

Fol. fennæ ʒi. infus. in decoct. tamarind.
cum rhabarb. ʒiſs.

If, on account of the firmness of the obstruction, a stronger medicine should be found necessary, the patient may take of the electuary in the subsequent prescription, which I got from my brother, when he was in life, P. M. REYNERUS BONTIUS, first physician to prince MAURICE of Orange, and professor of medicine in the university of Leyden :

R

Ligni guaiacini ℥ ii.

Sarsaparillæ ℥ viii.

Cort. Ligni guaiac. ℥ iii.

Post macerationem in q. f. aq. fluvii per 24 horas, coquant. q. f. colaturæ ferventissimæ adde

Fol. fennæ mundator. ℥ i.

Polypodii ℥ fs.

Sem. anisi

Fœniculi āā ℥ iii.

Hellebor. nig. ℥ vi.

Myrobalanorum omnium

Tamarind. āā ℥ ii.

Bulliat q. f. in supradicto decocto, colaturæ rursus adde

Pulpæ cassiæ fistul. ℥ xii.

Puly. fennæ

Pulv. Rhabarb. āā ʒx.

Cort. ligni guaiac. ʒiv.

Scammon. elect. pro quaque electuarii lb. i.
adde ʒi.

Sacchar. alb. q. f. ut f. electuarium molle.

The dose is from four drachms to an ounce.

Most of the ingredients in this electuary are to be met with here. For the polypody grows much more thick and succulent on the mango-tree, than on the oaks in our country. And if the black hellebore is wanting, we use in place of it a species of the white, which the Chinese, and people of Java call potstock, and is in great esteem. Tamarinds, and cassia grow plentifully here in all the woods. In the room of scammony, which, however, as well as the other kinds of the convolvulus, the country abundantly supplies us with, we may very advantageously substitute the gamboge, after it has been macerated for some days in vinegar, or brandy. For, by such preparation, it is entirely divested of its emetic quality, and purges the belly more mildly than scammony. For common drink, let the patient use a light decoction of china, with the roots of turmeric, which the Portuguese call saffra de tierra, as much as to say subterraneous saffron. The powder of it, taken with honey, in the form of

an electuary, from half a drachm to a drachm, operates as a specific in this disease, and carries off the offending humours extraordinarily by urine. The flatulence which constantly attends this disorder, may be dissolved by the carminative seeds and oil of anise. In short, all these medicines grow in this country, and the Chinese, and inhabitants of Java reserve them for such medicinal purposes.

C H A P T E R XI.

Of an Atrophy.

IT is common for people in this country to waste in their flesh, and grow lean without any manifest cause ; no fever, or at most a very slow one attending. There is no considerable pain ; only a little weight is felt about the navel and hypochondria. This disorder, besides an obstruction in the bowels, has often for its cause some latent fault in the meseraic veins, or the substance of the mesentery, where abscesses frequently are formed, as I have more than once observed upon dissection. Nay, I have sometimes found the whole mesentery consumed : and yet the intestines adhered, or rather were confusedly jumbled together, by means of thin, little skins, or membranes attached to them. Thus reduced to the last degree of extenuation, the native heat being intirely extinguished, the miserable mortals die. It is remarkable in this disease, that it is generally attended with a Βῆλιμος or canine appetite, to which is joined a lientery, in which the food is discharged by the

intestines, little or nothing changed, and uncocted. Altho' those who are affected with this disorder commonly die of it, yet, that we may not seem absolutely to despair of their recovery, an attempt should be made, that, if by chance, some fortunate revolution of nature, assisted by gentle medicines, may save them from impending destruction. Moderately hot medicines, therefore, with anodynes, and mild deobstruents, should be used. Such are decoctions and preserves of the seeds of anise, fennel, and caraway, with other carminatives above-mentioned. What is also highly advantageous, is the species of grass produced in this country, of which the name and description are to be met with in Prosper Alpinus, in chapter xl. of the Egyptian Plants, and is deservedly called cross-grass, on account of its having four ears at the top of the stem, exactly forming that figure. The root of this grass, so much used, has an aromatic flavour, nearly approaching to the root of the cario-phyllata, or avens. The taste of it is a mixture of sweet and bitter. I have observed admirable effects from a decoction of this root, where there was a stone in the kidneys, and in other chronical obstructions, as that of which I am now treat-

ing. The herb brook-lime, or becabunga, which grows here on the banks of the rivers, with its beautiful white flowers, is likewise of great advantage. For diet, the patient ought to eat of turtles and chaffinches, which the soldiers and Moors shoot with their muskets, and bring daily to market. Goat-milk, also, affords remarkable benefit, as by means of the nitre in the whey, it deterges the melaenic veins, and frees them from obstructions. Purgatives ought wholly to be abstained from, lest, while we endeavour violently to make a revolution of the humours, we should increase the obstructions by the heat and acrimony which these medicines generally possess. Add to this, that on account of the defect of nutrition, the patient is always extremely weak.*

* Our author having made no mention of the dry belly-ache among the diseases of the abdomen, it may not be improper to give a short account of a malady so endemial in hot climates.

The most remarkable symptoms which attend this disorder are griping pains and contortions of the bowels, flatulence, vomiting and obstinate costiveness. The morbid matter is sometimes translated to the arms and legs, which it renders paralytic.

In the dry belly-ache, the grand intention of cure is to remove the constipation. But before the exhibition of cathartics

for that purpose, the pain of the bowels must be mitigated by emollient and anodyne fomentations and embrocations, and administering opium in clysters. A spoonful of the oleum palmæ Christi, swallowed every hour, until a stool is procured, has lately been celebrated in this disease. When the pain is violent, and the vomiting so incessant, that nothing can be retained on the stomach, we are encouraged to expect that the complaints will be removed by giving purgatives, joined with opiates and camphire. The use of the warm bath contributes to allay the pain, and forward the operation of cathartics. When by these means, stools have been procured, the belly ought to be kept open for some time, by the use of gum pills and aloes: and if rheumatic or paralytic complaints supervene, recourse must be had to nervous strengthening medicines. Moderate riding on horseback, in the dry belly-ache, conduces greatly to complete the recovery and prevent a relapse.

C H A P. XII.

Of some of the disorders of the Lungs, which are common in this country; and first of the Hæmoptoe, or Spitting of Blood; and the Consumption, or Ulcer of the Lungs.

I Ought, perhaps, to have treated of these diseases in the order observed in the schools; but as I prefer utility to ostentation, and am more solicitous about the matter of my subject, than the method of arranging it, I thought it of no consequence to the cure, whether I treated of them first or last.

Since, therefore, the constitution of the air in this country, as I observed above, is hot and moist, it often happens that the head is loaded with sharp catarrhs; whence a heaviness of that part is so common a complaint, and frequently more lasting than with us. The soldiers and sailors are particularly obnoxious to these disorders, by reason of the pernicious custom of laying

themselves down on the ground after they have drank pretty heartily, and sleeping without any covering, exposed to the dews and vapours. And here let me observe by the way, that lodging in the upper floor of the house, is far more wholesome than below, where ants, scorpions, and the kind of beetles called caccarlaccas swarm on account of the moisture of the earth.

These catarrhs often fall upon the Lungs, which they erode by their saltness and acrimony, and hence produce hæmoptoes, consumptions, and empyemas or suppurations. I here omit mentioning the concomitant symptoms, such as a troublesome cough, difficulty of breathing, and a hectic fever, as these are known to all practitioners, and I hasten to treat of the cure.

The above-mentioned disorders of the Lungs, so frequent in this country, being generally the consequence of catarrhs and distillations, these last ought by all means to be carried off by proper purges. The following pills are well adapted to that purpose :

R

Aloes Socotrin.

Gambogiæ

Colocynth. pulverifat.

Scammon. elect. āā partes æquales :

Infunde in aceto, vel spiritu vini, modo jam sæpius dicto, & sole evaporentur in massam pilularum.—

The dose is from a scruple to half a dram, or in strong constitutions to a dram : for, as fluxes of the belly are very violent in this country, so likewise is costiveness, which is not to be corrected without the stronger cathartics. My brother's electuary, formerly mentioned, is also of great advantage in this case.

After a derivation of the humours towards the belly, the remains of the catarrh ought to be extirpated by other remedies, particularly calculated to clear the brain, such as sternutatories, and masticatories, of pellitory, staves-acre, the seed of radish, cresses, pepper, and things of the like kind. Besides these, we have here a noble medicine, made of the Indian or Malabar nut, betle, and lime of oyster-shells, which by being chewed draws the phlegm from the brain, consumes what is generated in the stomach, and prevents it from stuffing the head with those vapours which are the cause of catarrhs. This medicine is called in the Malaian language, Sirii Pinang. For its description, and the other remarkable virtues of

which it is undoubtedly possessed, see Garcias ab Orta's *historia aromatum, cap. de betele, ac areca*. It is a species of that pinang which the Indians call mabock, as much as to say drunken, which in a short time affects the head, in the same manner as too large a draught of wine ; but on eating a little salt, the giddiness it produces goes off.

When these catarrhs, either through neglect, or unsuccessful treatment, have, by the saltiness with which they are endowed, eroded the vessels of the lungs, or opened them *per anastomosis*, and the person falls into an hæmoptoe or copious spitting of blood, with a great cough, blood should immediately be drawn in a large quantity to make a revulsion ; after which, incrassating pectorals, and medicines restraining an hæmoptoe, are to be used, which I shall mention below. If the patients should for a little escape the spitting of blood, the cough, however, remaining unabated, with a discharge of purulent matter, it is a sign that a consumption, or ulcer of the Lungs is formed, to which if a hectic fever succeeds, a marasmus and death must ensue.

As an hæmoptoe and ulcer of the Lungs have so great an affinity, and one is generally the cause of the other, the method of cure in both

diseases is either entirely the same, or extremely similar. In the beginning, therefore, we ought to use the cold species diatragacanth, for making which we have here abundance of the seeds of cucumbers, gourds, melons, &c. Almonds, and the seeds of poppy, are also plentifully supplied to us from Surat ; all which, together with other medicinal productions of the country, are preserved for use, compounded in the form either of cakes or electuaries. But nothing is of equal advantage with the extract of saffron, so often mentioned, which not only restrains the spitting of blood, but mitigates the cough, and by thickening the purulent matter, facilitates expectoration. It likewise heals and cicatrizes the ulcerated lungs. In a word, by that medicine only, I have cured many who were in a desperate situation. The patient ought also to take a draught of the following decoction, thrice a day at least :

R

Scabiosæ

Morsus diaboli

Linguæ cervin. āā m. i.

Capit. papav. demptis summitatibus. No. iv.

Glycyrrhiz. raf. ℥i. Coque in q. f. aq.
commum.

Colaturæ ℥. iifs. adde

Ol. fulphur. q. f. ad gratum acorem. m. f.
apozema.

If the lungs require to be cleansed still more from the purulent matter, you may add to this decoction two ounces of the honey of roses. For the same purpose, and promoting expectoration, we may also employ this conserve :

R

Conserv. rosar. e Persia antiqua ℥ii.

Sem. papav. alb. contusi ℥fs.

Flor. fulphur. ℥ifs.

Pulv. solidaginis Saracenicæ

Scabiosæ āā ℥i.

Ol. fulphur. q. f. ad gratum acorem. m. f.
conditum.

For common drink, let the patient use a decoction of china, or sarsaparilla.

C H A P XIII.

*Of the Empyema, and fluctuation of purulent matter
in the cavity of the Thorax.*

TH E cure of the Empyema is performed by the same medicines required in an ulcer of the lungs, but with far greater difficulty: because the pus, and sanious matter being lodged, either in one or both sides, between the lungs and diaphragm, though frequently we may drain off a part of them, we scarcely can evacuate the whole. And yet there is no other passage for the discharge of the matter, than the trachea arteria, whatever people may affirm of its being frequently carried through the left ventricle of the heart unto the liver and meseraic veins, and thence discharged critically, in the course of circulation, either by purulent stools, or urine. I pretend not, however, to disparage the authority of those who maintain that doctrine, though in the whole course of my practice, I never was so fortunate as once to see such an excretion. But the method

of cure I am now to propose, though no question somewhat ticklish and precarious, will certainly be acknowledged by every judicious person, to be the most excellent and effectual resource. A potential cautery is to be applied to the intercostal muscles, between the fourth and fifth ribs, above the diaphragm, till a large enough eschar is formed, which generally happens in about the space of three hours ; after which a sufficient incision is to be made into the part. Should this last operation not be preceded by the use of the cautery, the wound would heal too soon. To obviate which event, and facilitate the discharge of the purulent matter, the wound ought to be of such a form, as, having the largest diameter, its opposite edges may remain at the greatest distance from each other, which is most eminently the advantage of a round incision. Above all, however, care is to be taken that the pus or sanies be not discharged all at once, but at proper intervals, according to the strength of the patient, a consideration, in this country, of the highest importance. Many have I known surprisingly cured by this remedy : among whom are, a sergeant, and a corporal, in the Dutch garrison, who ever since, when I meet with them, perfectly harass me with their kindness, and

thankful acknowledgments : but of these I shall treat in particular observations. If I find that you are pleased with what I write, I shall take care to convince those whose approbation I esteem, that I have not passed the time idly since my arrival in the Indies. And with respect to the malevolent, I am entirely regardless of their censure : for I look on myself as placed above the reach of their envy ; and it is sufficient for my interest here, that I preserve the good opinion of the governor, and counsellors of the Indies.

C H A P. XIV.

Of Fevers in the Indies.

TH E Fevers in the Indies, are generally either symptomatic or continual, and for the most part of the kind call putrid fynochi. I scarcely remember to have seen any that observed regular periods, and had an intermission or an apyrexia, unless one or two quartans, which the patients brought hither from their own country, and which terminated in dropsies and death. Fevers therefore, in India, are commonly erratic and irregular, and so various in their types, that it is impossible to reduce them into classes. I do not affirm that tertian intermittents never make their appearance here ; but they are so extremely rare that we may here apply the proverb, that one swallow makes not the spring : and my design is, to write of such diseases as are constantly frequent and endemic. In general, however, it is true that those diseases, in the progress of which

fevers supervene, are more dangerous in this country, than disorders which they accompanied from the beginning. I shall, therefore, say nothing of symptomatic Fevers, as the cure of them is connected with that of the primary disorder, but only speak of the continual, which commonly attacks people with such violence here, as in an instant to deprive them of reason, and with a phrenitis, and incessant delirium, often kill them in a few days, or even hours.

This fever is attended with perpetual watching, and vomiting of variously-coloured matter, particularly of green and æruginous bile. The external parts of the body are cold : while, inwardly, great heat and thirst prevail. As this fever, therefore, is a species of the putrid synonchus, in which the blood deviates from a healthy standard, in respect both of quantity and quality, who can doubt that the two celebrated remedies of antiquity are proper for its cure ? though which of them ought to be premised, may be matter of dispute. But, passing over the subtle arguments, and altercation of the schools, it is my opinion that purging ought to be the evacuation first instituted ; because, if otherwise, the benefit of blood-letting will be more than balanced by the

injurious commotion excited by the subsequent purge, which may drive, perhaps, the humours to some of the principal parts, and produce the most terrible symptoms.* In the beginning of the disease, therefore, the sick should be gently purged with tamarinds and the pulp of cassia, a common clyster, at the same time, being injected, with an ounce of the electuary above described. Venæsection may, then, be performed with safety and advantage, and even repeated if required; the necessity of which, the judgment of the physician must determine. The whole body is afterwards to be rubbed with the ointment of borborii†. But, if watching, and a phrenitis attend, the vein in the forehead ought to be opened, and sleep procured by every soporiferous medicine; as philonium sine euphorbio, requies nicolai, mithridate recently made,

* An inviolable observation of this method of practice, though formerly much contended for, is now generally disregarded, as trivial; and the order of precedency betwixt bleeding and purging, is determined rather from reasons of convenience, than any fixed and permanent rule.

† This ointment, of which the principal ingredient is turmeric, is mentioned by our author in another place, and greatly esteemed by the Indians, in various diseases.

&c. But, in all cases of danger, we must still fly to my laudanum, or extract of saffron, as the last resource; which, for its extensive utility in the diseases of this country, can never be sufficiently applauded. The other erratic fevers I mentioned, are to be cured in the same manner with those which have stated paroxysms, and resemble them most in their nature; which, as they are sufficiently known from other writers, I shall not enlarge upon here.

C H A P. XV.

Of certain Fevers, which the inhabitants call Tymorrenses, peculiar to the Indies.

THE people who sail to the islands Solor and Timor, in order to cut down the faunders trees, are seized with a sort of putrid Fever, which, if continual, is attended with a delirium and phrenitis, but, if increased at intervals, (for sometimes this fever has remissions, though never intermissions) the exacerbation continues generally about four hours, during which time the sick behave themselves in the most ridiculous manner, imitating the employments which they exercised while in health, and babbling out all the most secret transactions of their lives, to the no small entertainment of the by-standers. It is likewise attended with a Βῆλιμος or carnine appetite, so that while the patients are in a delirium, they eat every thing that is presented to them, though it be of the vilest and most abominable kind.

F

This fever arises from various causes, of which the principal are these : the smell of the faunders tree when newly felled ; which (on the testimony of the inhabitants of the country) sends out from its bark some vapours of I know not what poisonous quality, and noxious to the brain*. See the history of the faunders wood in Garcias ab Orta, lib. i. chap. 17. Besides, the constitution of the air is thick, and extremely heavy : for, the dwellings of the inhabitants are on the highest mountains, where on account of the situation, clouds and watery vapours prevail. The cold, likewise, is sometimes as severe as in Holland : all which concur to produce thick humours and turbid spirits. Add to these several causes, the custom, in this country, of eating a great deal of fruits, which as they are for the most part green, and on account of their moisture, obnoxious to putrefaction, generate bad juices in people whose constitutions have been altered by the sea, hard labour, gross diet, and an intemperance of the air. I had almost omitted to subjoin, as another cause, the sudden change of air which our people expe-

* It is probable that the cause here specified is more imaginary than real : as we have no instances of putrid fevers being excited by the effluvia of vegetable substances.

rience when they descend from the cold mountains to the shore and the ships, where they are scorched with heat: for this island is situated towards the south, about ten degrees from the æquator. And, as Ovid says,

Cum modo frigoribus, calido modo stringimur æstu,
Tempore non certo corpora languor habet.

What are also greatly to be guarded against, are the winds which blow from the mountains after midnight, in Java and the circumjacent islands: just as in some of the southern parts of France and Italy, especially in the kingdom of Naples, and the territory of the Pope, the cold wind which blows from the hills, and is called the *serene*, produces pleurifies, peripneumonies, and other acute disorders, whence Horace remarks,

Matutina parum cautos jam frigora mordent.

The cure consists in gentle purging, and, a clyster being premised, in immediate blood-letting, which in plethoric and strong people, should be carried to the point of fainting. Let cupping glasses be applied to the neck, shoulders, and

crown of the head, shaved. The natives burn the temporal arteries by means of a bit of hot metal, with prodigious advantage, as they also do in all chronical pains of the head. The morbid humour may likewise be conveniently purged off with my brother's electuary before mentioned. And I have learned by experience, that vomits of crocus metallorum, and the salt of vitriol precipitated, are extremely useful in this disease. If the watching, which increases the phrenzy, should be perpetual, we may use, besides other narcotic medicines, my extract of saffron, either made into a pill, or dissolved in wine. All these general remedies being administered, the temperament of the heart, liver, and brain, is to be corrected by sudorifics and diuretics, as also by antidotes, such as bezoar, and rasura cornu rhinocerotis, and by cooling conserves and syrups, which I have so often had occasion to mention*.

* To this article we shall subjoin the account of an endemial putrid fever at Bengal, extracted from the inaugural dissertation of the ingenious doctor James Lind, printed in the year 1768.

This fever, which attacks suddenly, commences with a great prostration of the strength and spirits. A variable coldness succeeds, with vertigo, nausea, a tremor of the hands,

and excruciating pains of the head and loins. The face is pale, the skin generally dry and constricted, the eyes dull and heavy, the pulse quick but small, the respiration, for the most part, difficult, and interrupted with sobing.

As the paroxysm advances, the coldness is intermixed with wandering heats, which, increasing fast in violence, become permanent. The nausea rises in severity, and sometimes produces vomiting. A great quantity of bile is thrown up from the stomach, and frequently also discharged downwards. The skin reddens, the eyes become tumid, and sometimes much inflamed.

The pulse grows fuller, and the breathing more difficult, with great restlessness and thirst, which however, on account of the nausea, the patient is unable to assuage. The tongue becomes foul, the pain of the head and loins more severe, and a moisture appears on the face, which, gradually diffusing over the body, the violence of the paroxysm at the same time decreasing, betokens the approach of a remission which is accomplished by profuse sweats.

The pulse then returns almost to its natural state. The pain of the head and loins, however, continues, though much diminished : there is a disagreeable taste in the mouth, and the appetite still is prostrate.

This remission is soon succeeded by another paroxysm, which begins not with so much of a tremor, but a greater pain of the head, extreme restlessness, a cardialgia, nausea, and bilious discharges by vomit and stool, resembling the colour of lime water. Great heat, immoderate thirst, and delirium supervene. The tongue becomes more rough, and, together with the teeth and inside of the lips, is covered with a black crust. The breath is hot and fetid. Again, a sweat produces a re-

mission, which, however, is of shorter duration, and less conspicuous than the former.

A third paroxysm comes on, in which all the symptoms are aggravated, and the vomiting and stools more fetid. The tongue becomes so dry and stiff, that the patient scarcely can speak. This paroxysm often proved mortal.

Such generally were the symptoms of this fever, which, however, were sometimes different in the different seasons of the year. And though most commonly the skin was dry till towards the end of the paroxysm, there were cases in which it was moist, and covered with sweat from the beginning.

The gentleman, from whose treatise the description of this fever is taken, imputes the production of it, with great probability, to unwholesome diet, and air, which is contaminated by the putrid effluvia of the marshes abounding in the bay of Bengal.

With regard to the cure of this fever, the method is in general the same as in others of the putrid kind. It deserves, however, to be remarked, that on the testimony of a judicious practitioner, corroborated by the author of the inaugural dissertation, the peruvian bark has been successfully administered in remitting fevers in the East Indies, even during the paroxysm. And from instances in our own country of the good effects of exhibiting that medicine through all the stages of these fevers, perhaps there is reason to adopt a still more unlimited use of the febrifuge, than, with all its extension, has hitherto been recommended by the most eminent writers on the subject.

C H A P. XVI.

Of Blindness, and a weakness of Sight, to which those are liable who sail to Amboyna, and the Molucca Islands, and in the circumjacent friths.

THE people who sail to Amboyna, Banda, and the Molucca islands, are often troubled with a weakness of sight, and even a total blindness, arising from thick and viscid humours stuffing the head and brain, and obstructing the optic nerves : which blindness, however, is not perpetual, but often ceases upon a change either of air, or better diet. The inhabitants of these islands impute it to eating hot rice : and that such is really the cause of it, seems to be confirmed by experience. Hence the people of Java and Maldivia expose their rice, after being boiled, to the cooler air, or winnow it with a fan : and our sailors are prohibited from eating hot rice under a certain penalty. If we enquire farther into the origin of this disorder, we shall have still more

reason to be satisfied with the probability of the cause here assigned. For this rice is always sown in wet and marshy places, whence it contracts something of a foeculent and moist nature, which penetrates farther when hot than cold. For the smell of even crude and dry rice loads the head, and brings on a drowsiness.

The method of cure I commonly use in this disorder, and by which I have recovered many to their former state of health, is this. First, the head is to be purged, and the stomach cleansed of the gross humours, which send up these vapours to the brain. This intention will be best answered by the purgative pills of Reinerius Bon-tius above described. Then, sternutatories of the powder of tobacco, &c. and masticatories are to be used. Bleeding is likewise advantageous. But the grand specific in this disorder, and a medicine of which I have often experienced the virtues, is the liver of the fish *Lamia*, eaten crude with salt. This fish is called in Dutch *een Heye*: and when exposed to the sun, there distils from it an oiliness, named in the same language *Traen*, which, anointed upon the eye, is an immediate remedy, owing, without doubt, to the peculiarity of its sub-

stance : for so far are the livers of other fishes from possessing a similar quality, that they are rather of manifest injury. Upon the whole, though this blindness is often transitory, yet, if neglected, and an improper diet be persisted in, with an unseasonable use of arrac, it often degenerates into a total deprivation of sight, of which every where here we meet with instances.*

* That the disorder here treated of actually proceeds from eating hot rice, seems extremely problematical ; since the author acknowledges that it is cured, not only by a change of diet, but of air. Perhaps the description may not authorise the conjecture ; but as the disease is transitory and yields to evacuations, it would appear to be no more than a greater degree of the nyctalopia, or night-blindness, which is frequent in the torrid zone, and cured by bleeding, purging, and the root of wild valerian.

OF SOME EXTERNAL DISEASES OF THE BODY, IN
THE INDIES.

C H A P. XVII.

*Of the Herpes, or a species of the Indian Impetigo,
which the Inhabitants call a Cowrap.*

HAVING treated of the chief internal diseases which are endemic in these remote places, passing over the slighter affections which happen daily here, as well as in our own country, I now propose to give an account of some external disorders likewise familiar in the Indies.

Among these the principal is the herpes, a most troublesome kind of impetigo, or tetter, which chiefly seizes the arms, breast, groins, face, and sometimes even the whole body, with so intolerable an itching, that those affected with it, cannot refrain from scratching themselves night and day; but the soothing sensation arising from that exercise, is of short continuance; for great pain ensues, while the sharp and saline humour velli-cates the tender parts that are now deprived of the cuticle, and the shirt, which adheres to the

scabs, cannot be separated without their laceration. The natives call this disorder the cowrap, a word signifying every kind of scab. The cause of this cutaneous affection is a salt and nitrous pituite, mixt with bile and melancholic humour. It is propagated by contact, and is so extremely infectious, that few escape it: tho' this disorder renders the skin deformed, and rough with scales, yet it is productive of one great advantage, which is, that a person while affected with it, is scarcely ever seized with any other dangerous complaint. On the other hand, when the cowrap disappears suddenly, it prognosticates the approach of such an illness; the peccant matter, by a metastasis, being carried to some nobler part. For that reason, there are people in this country, who, after experiencing the disorder some years, are little solicitous of being cured. But we who know that when the cause is removed, the effect ceases, know, likewise, that what the vulgar regard as wholesome in itself, proves only such by accident, and that the disease of the cowrap is a happy effect from a bad cause. Just as in a gonorrhæa virulenta, where, the liver expelling the venereal virus to the parastate glands, and thence to the penis, the sufferers comfort themselves in the dis-

ease; though it is well known to those who are in any degree conversant in medical practice, that, if the gonorrhæa is not cured, a lues venerea must ensue.

If this disease be neglected, especially in melancholic and atrabiliary constitutions, it changes into the lepra of the Arabians, or, what is much worse, the elephantiasis. The cure of it, in the beginning particularly, consists in evacuating the morbid cause, which may be successfully performed by the purgative medicines so often mentioned. For, unless general remedies are premised, it will be vain to have recourse to topical applications. The following excellent powder I have administered with great advantage in this, as well as other melancholic diseases.

℞

Fol. fennæ mundator. ℥xiv.

Rhabarb. opt.

Turbith alb. āā ℥viii.

Tartar. alb.

Scammoneæ elect. āā ℥iv. m. f. Pulvis subtilissimus.

The dose is a dram in any convenient liquor.

Among the best topical applications, is one which was communicated to me by the reverend and learned Mr. Justus Heurnius, a man of singular proficiency in every part of knowledge.

R

Ferruginis ℥i.

Sulphur. ʒfs.

Subtiliter in marmore fricentur; adde

Succum e foliis Basilici, & f. pastilli.

These troches or balls are to be dissolved in vinegar, with which the parts affected with the cow-rap are to be touched at night, and which, for the sake of cleanliness, may be washed off in the morning. If it should not prove effectual,

R

Opii ʒfs.

Calcis vivæ ex conchyliis ustæ ʒii.

Fricentur in marmore, cum succo pomorum amoris.

That the application of this remedy may be more successful, the scab of the herpes should first be scraped off, and the ichorous matter wiped away. For the same purpose, may be used the oil of gum benzoin, with nitre, or salt prunel,

or a very small quantity of mercury sublimated. With these the juice of lemons may very advantageously be mixed, together with prepared tutty, or ceruse ; by which topical remedy alone, with a dose of physic previously taken, I effectually cured myself, when my arms and breast were infested with this loathsome disease. The diet here, as in all cacochymic cases, should be moderate, and consist of such aliments as yield good and wholesome juices ; the choice of which, to avoid tautology, I shall leave to the judgment of the physician*.

*The cowrap is a disease very common among the inhabitants of the torrid zone. It is cured by mercurials, antitimonials, sudorifics, and the external application of the flowers of a shrub, called in the West India islands the French guava bush.

CHAPTER XVIII.

*Of red Pimples, or Wheals, vulgarly called in Holland
het Rootvont, and troublesome flea-bites.*

THOSE eruptions which Cornelius Celsus, the Latin Hippocrates, calls papulæ, Pliny fudamina, and the people of Holland *Rootvont*, are so common in this country, that I never yet knew one person here, who escaped them, no more than the bites of the fleas which the Portuguese call *mosquitas*. The pimples are of a red colour, somewhat rough, and thrown out upon the skin by a sweat. They infest the whole external parts of the body from top to toe, with great and irresistible itching. People newly come from the country are more affected with this eruption, as well as the bites of the musquetoës, than those who have lived in it some time : so that it is a common jest here, to say, by way of ridicule, that he who has the eruption, is *Orang Barou*, meaning a novice, and therefore, that the flies and papulæ claim a tribute of milk

and butter for having seized him; for those who have been longer in the country, call themselves, boastfully, *Orang Lamme*, or veterans.

This troublesome complaint, as far as it is an eruption, is to be ranked only among the cutaneous diseases: but if treated rashly, and the skin be wounded by the nails, the wheals, and likewise the bites of the musquetoës, often produce foul ulcers, which are malignant and difficult to cure.

Sic neglecta solent incendia fumere vires.

To abate the uneasy itching, I advise the parts affected to be touched with a linen rag, dipped in a mixture of vinegar and water, with the addition of nitre, or salt prunel, and if the composition is desired stronger, the fresh juice of lemons. Though by the use of this application, the pain at first may increase, yet it soon vanishes, and is much more tolerable than the itching. By the way, I would earnestly dissuade physicians and surgeons from ever giving purgatives in this disorder, though they were even of the mildest kind, lest the acrid bilious matter being there-

by translated to the intestines, should occasion a dysentery : but let them rather leave the cure entirely to nature, or promote the excretion by sudorifics ; for I have more than once observed such mischief produced by negligence or imprudence.

C H A P. XIX.

Of Tophi, Gummata, and Ulcerations, endemic in the Island of Amboyna, and especially the Moluccas; which the Dutch call d'Amboynse pochen.*

THERE is an endemic or popular disorder in Amboyna, and the Molucca islands particularly, which in its symptoms resembles much the venereal disease. But they differ in this respect, that the former is produced without any venereal embrace. There break forth on the face, arms and legs, tophi or tumours, at first hard and schirrous, and spread as thick over the whole body as corns and warts grow on the hands and feet in our country. If these tumours happen to ulcerate, they discharge a viscid and gummy matter,

*This disease is called by the English the prickly-heat: and generally seizes all strangers soon after their arrival in hot climates. The best method of curing it is, to observe temperance, use moderate exercise, and support a free perspiration by drinking warm liquids, and avoiding a sudden transition to cool air, night-dews, and damp places.

but so acrid and corrosive as to cause deep and hollow ulcers, with inverted lips; a nasty and ugly disease, and similar to the lues venerea, but that it is not attended with so much pain, nor do the bones so easily become carious, unless by neglect in the cure.

This distemper owes its origin to the peculiar nature of the climate and soil; to the air, infected with salt exhalations from the sea; and to gross and pituitous diet, such as is yielded by most of the sea fish, of which great plenty is caught here, and which the inhabitants constantly feed upon, as the country affords little other provision. What likewise greatly contributes to produce this disease, is the use of a viscid substance, which is eaten over the whole country instead of bread. It is called fago by the inhabitants, and is a flour shaken from the bark of trees. To these causes, may be added the unreasonable drinking of a liquor named faguër, which is procured from the tree almost in the same manner with that taken from the palma indica, or cocoa tree; which the inhabitants call towac, and the Portuguese vinho de palma. This liquor, drank in immoderate quantity, intoxicates like wine or ale, and is hurt-

ful to the head and nerves : whence also in these islands, the species of palsy, already spoken of under the name of the barbiers, is pretty frequent.

As to the cure, it is not very difficult, provided that the disease be recent ; but more tedious if that is inveterate. It requires almost the same remedies as the lues venerea, obstructions of the spleen, leucophlegmatia, the dropfy, and other chronical and obstinate distempers. Decoctions, therefore, are to be made use of, prepared of the roots of china, sarsaparilla, guaiacum and its bark, in which two handfuls of brooklime may be boiled. The peccant matter is afterwards to be discharged by the brisker cathartics : for the gentler kinds are of no advantage here. Such are gamboge and elaterium ; and if these, should prove ineffectual, we must have recourse to chymical and mineral preparations, as mercurius vitæ, or butyrum antimonii, turbith minerale, and mercurius præcipitatus albus. Mercurial ointments, likewise, properly prepared, are to be applied externally : all which may be met with in Crollius, and other knowing and experienced chymists.

SOME SELECT

OBSERVATIONS

TAKEN FROM THE DISSECTION OF DEAD BODIES, AND TENDING TO THROW LIGHT ON THE DISEASES ABOVE TREATED OF.

OBSERVATION I.

Of a Person who died of the Spasm.

A Soldier, who being drunk had lain the whole night on the ground, on awaking, was suddenly seized with a spasm, his body bent backward, that he remained perfectly stiff and crooked. When brought to the hospital he was put under my care. He looked fierce, could swallow nothing, and spoke inarticulately, as with the voice of a person under ground. He died within four days, in extreme torment, after all the remedies I have mentioned in the method of cure, had been administered without any effect. I was curious to investigate the cause of so severe a disorder : wherefore, calling Mr. Andrew Du-

ræus, the most expert surgeon of the Dutch hospital, we opened the body. We found the vital parts, such as the heart, and lungs, and the natural organs, as the liver, stomach and spleen, all found. We justly suspected, therefore, that the source of the evil lay more deep. We laid the brain open as far as the ventricles, which we found to be full of a viscid and glutinous matter, of a yellowish colour, like the yolk of an egg, but extremely fetid. This, pressing upon the origin of the nerves, had been the cause of such direful symptoms. The veins running through the meninges of the brain were quite turgid with bilious blood. He died in the month of February 1629. An ensign who kept guard in the fort, called Rubin's rampart, was seized soon after in the same manner; but, besides the symptoms mentioned above, his right cheek was so contracted with the cynic spasm, that during the whole paroxysm, he could not utter one word, and died in twenty four hours; a strong and robust young man, if ever there was any.

OBSERVATION II.

*Of a Person who laboured under an Empyema and
Consumption.*

HENRY N. N. a Danish merchant, who lay sick in the house of Ambrose Vander Keer, sheriff of this city, was dissected after his death by Mr. Andrew. Both lobes of the lungs adhered so firmly to the pleura and diaphragm, as not to be separated without laceration. In the right side, where he had felt the most pain, were found pieces of the bronchia, which had been torn from the substance of the lungs, together with a great deal of sanious matter, such as in his life time he had copiously spit up. His voice was shrill, like that of the African cocks, or those of Calcutta. He had laboured under a spitting of blood for a long time before, which laid the foundation of this lamentable disease, of which, extenuated to the last degree, he died the 19th of August 1629.

OBSERVATION III.

Of one who died of the Dysentery.

BY order of the governour, Mr. Adam, surgeon of the Dutch garrison, and I, opened the bodies of some who had died of the Dysentery, which raged epidemically among us when we were besieged by the people of Java. One of those who were opened was a soldier. His intestines were greatly inflated, and deprived of their inner coat. What was most extraordinary, the gall-bladder was full, and distended with a viscid white humour, like the pap made of starch, which the women in Holland call *styyfel*. There appeared not the smallest vestige of any bile.

OBSERVATION IV.

Of a Man whose Lungs were full of purulent Matter.

IN the month of May 1629, we opened the body of a soldier who died of a consumption. The substance and colour of the lungs, ex-

ternally, were in appearance sound ; but on being dissected, there run out a great deal of green, and exceedingly fetid pus ; and the right lobe of the lungs adhered to the ribs. It is remarkable that among the many bodies I have dissected, I never observed the left lobe alone to adhere, but either both, or the right only. The reason of this I confess I know not, unless it be that the vena azygos, or sine pari is wholly in the right side, and on being burst in the pleurisy by violent coughing, throws out this matter. Hence, likewise, exquisite pleurifies happen mostly in the right side.

OBSERVATION V.

Of a Person cured of an Empyema.

A Soldier, who had drank immoderately of arrac, was carried into the fort entirely stupid and motionless. We did not imagine that he could survive the night : however, partly by vomiting, and partly by sleeping out the debauch, he was seized next day with a violent pleurisy in the right side : and though the pain had much abated

on bleeding, the inflammation terminated in an ulcer, the consequence of which was an Empyema. As yet his strength remained unshaken, nor was he now molested with any great degree of fever. We therefore applied the potential cautery between the fourth and fifth ribs, and opened the eschar afterwards with a knife. There flowed out a great quantity of sanious matter, together with some putrified pieces of the membrane which lines the ribs. By proper syringing he recovered beyond all expectation; and, at the time I am writing this, has set sail for Malacca.

OBSERVATION VI.

Of a remarkable Fracture of the Skull.

A Sailor who was cleaning his vessel in this port, while he was shoving off the boat with a pole, that it might not strike against the ship, happening to stoop down in order to disentangle the cable, the boat in the mean time unfortunately dashing, by the force of the waves, against the ship, had his head so terribly jammed betwixt the vessels, that it was thought to be shat-

tered to pieces. He immediately became senseless, and, the blood gushing out from his mouth, ears and nose, was carried to the hospital. When Mr. Andrew and I visited him, we looked on his case as desperate. At first we found a very large contusion in the back part of the skull, from which, after opening, we extracted a great deal of concreted blood. Next day, when all was cleaner, it appeared that the skull was broken to many pieces: on the removal of which we prosecuted the cure in the usual manner. He remained under our care about six months; during which time the whole bone, comprised within the lambdoïdal future, was taken out in splinters, a little above the hole in which the first or tooth-like vertebra of the neck is inserted. He returned to his own country in the month of November, perfectly restored to health; wearing on the back part of his head a plate of silver, of the form of half an helmet, which was given him by governour Coën to defend his brain from any injury.

OBSERVATION VII.

Of a chronical and complicated Disorder.

ON the fifth of September 1629, we opened the body of a German soldier, who had languished, near a whole year, of an æruginous flux of the belly, dry cough, great difficulty of breathing, &c. The omentum and mesentery were almost entirely consumed, so that the intestines adhered together, or rather were confusedly mixed, small fibres growing out of them here and there. The spleen was contracted to the size and shape of a little ball, in such a manner as to be much less than the kidneys. The liver appeared of so many colours, wan, pale, yellow and green, that we were amazed. The gall-bladder, far larger than usual, was distended with æruginous bile. The stomach and intestines, which were eroded, contained likewise a quantity of that humour. The right lobe of the lungs so adhered to the ribs and diaphragm, as to appear inseparable. The reader will not be surprised at the difficulty of curing such a complication of disorders, which I have observed not in

this person only, but many others. This is the effect of drinking too much of that cursed arrac, made of rice and the holothurii. And as medical writers alledge, that the sea hare (which, as well as the fæpia, is a species of the holothurii) possesses a venomous and peculiar quality of eroding the lungs, I am much of opinion, that all these vile commodities are endowed with the same destructive power.

OBSERVATION VIII.

Of a Man in whom the Vena Cava was filled with a fat and medullary Substance in place of Blood.

SEPTEMBER 7, 1629, there was opened in my presence, the body of a Dutch man who had languished three years of a strange and unaccountable disorder. For, if any person put his hand on the navel, or thereabout, it was repelled by a strong pulsation, as of the heart and arteries, resembling the leaping of a child in the womb near the time of the birth. I found by the following experiment that the pulsation was synchronous with that of the arteries. I laid my left

hand upon the person's navel, and with my right touched the artery in the wrist, when it evidently appeared that the systole and diastole happened in both at the same time. From thence I concluded, that the great artery was affected, and the dissection confirmed my conjecture. For the vena cava, instead of blood, was filled with an adipose substance, resembling the medulla spinalis, which by its weight pressing upon the contiguous artery, the latter to free itself from the incumbrance, excited the pulsation. The great artery was twice larger than usual, and full of black and ferous blood. Mr. Andrew likewise dissected the heart, which also was uncommonly large and flaccid, and pressed together like a sponge. Each ventricle too was increased in size, and replete with the same sort of blood. Was it not amazing that a person in such a situation could live so long a time? The liver was of a vivid colour, and found consistence, but almost double its ordinary bulk. The gall-bladder equalled in magnitude that of an ox, and was stuffed with a blackish green, viscid, and ropy bile, of the consistence of a thick syrup, or rather an extract. He died the seventh of september 1629.

OBSERVATION IX.

Of an Imposthume in the Liver.

AN English soldier was seized with an inflammation of the liver, which, yielding to medicine no farther than in an abatement of the pain, terminated in the hepatic flux; the tumour, which had been formerly in the hypochondria, manifestly disappearing. After languishing six months in a miserable manner, he died, totally extenuated. On opening the body, we found nothing of the liver but the membrane surrounding it, pretty thick like a sack, in which there was still a little sanious matter resembling the water wherein flesh had been washed, and such as he had spit up for a long time. He died in April, 1629.

OBSERVATION X.

Of a Wound of the Head, where the Skull was falsely imagined to be cleft.

IN May 1629, I was called by a surgeon to visit a soldier, who had received a wound in the upper part of his forehead. The surgeon,

who had enlarged the wound a little about three months before, trusting to his instrument, called a provette, while he felt a roughness in the cranium, and os frontis, suspected there was a fissure, and as yet remained of that opinion: but when I examined into the case, I found, that what he imagined to be a fissure was only an extension of the sagittal future to the nose, as sometimes happens by a lusus naturæ. Wherefore, taking the surgeon aside, I shewed him his error. By this time, however, the bone had been affected by the air; for which reason, I caused the patient to be carried to the hospital, to Mr. Andrew, and it is now the sixth month that he has been under our care. We took away a piece of the bone from the coronal future as far as to the os temporale, or petrosum, and a large fragment from the other part. We also took away two parts of the os frontis, distinguished by the elongation of the future, which are still in the custody of Mr. Andrew Duræus: and at this present time, November 10, 1629, the wound is healed and cicatrised; the patient goes aboard a ship to-night, in good health, and in three or four days will return to his own country.

OBSERVATION XI.

Of a suffocating Catarrh in his excellency John Peter Coën, Esq; governour general in the Indies.

WHEN our worthy governour Coën was for some time ill of a diarrhæa, such was naturally his spirit that he abated nothing of his usual diligence in all the offices of his station; and when I have advised him to consult his own ease, and take care of his health, he would reply, that he had not leisure to keep his bed, as if he had said in a kind of prediction, that a general ought to die in the discharge of his duty. At length, on the 19th of September, about eight at night, I was sent for to visit him in the fort. I found him labouring under a difficulty of breathing, and a dry cough. The external parts of his body were cold, and there was a cold and clammy sweat. His stools, which had been preceded by bilious vomiting, were very copious, flatulent, watery, and full of bubbles. The pulsation of the artery so languid as scarce to be felt, and, at the same time, creeping. After weighing all these

symptoms, I immediately declared, in the presence of their excellencies the counsellors of the Indies, Mr. Anthony van Dyemen, and Mr. Quirin a Raemburch, that the governour general was just a dying. Astonished at the mention of so sudden an event, as the governour, but a very little before, had been talking with them familiarly, and imagining his present situation to be only a casual fainting occasioned by vomiting; they wondered, they said, that I could pronounce so rashly the fate of so great a man. I replied coolly, that I had never discredited my profession by passing any rash and unwarrantable judgment; but wished in the present case that my prediction might not be accomplished. Before one o'clock in the morning, however, the governour expired in a convulsion, which I had prognosticated a moment before. The fate of this honourable gentleman will not appear surprising to those who consider his shape and stature: for he had a long neck, and prominent shoulders: his complexion was pituitous and melancholy, and obnoxious to the consumption and suffocating catarrh of which he died.

OBSERVATION XII.

Of a person who died of a Wound in the Breast.

ON the 16th of September 1629, John Dragon, a Dutchman, was wounded in the breast with a sharp pointed instrument, which penetrated the os sterni into the lungs and œsophagus. A fever and hiccup supervened, and he died in eight days after he had received the wound. We opened the body, in the presence of the magistrate, and found the parts afore-mentioned hurt as we expected. The thorax was full of ferous blood and drink, which had flowed out of the œsophagus.

SOME SELECT

OBSERVATIONS

ON EPIDEMIC DISEASES IN THE INDIES.

OBSERVATION I.

Of an Epidemic Dysentery.

IN the year 1628, while we were besieged by the people of Java, the honourable Mr. Jeremiah de Meester, a member of the Indian council, fell into a continual fever, and afterwards a dysentery, which was then epidemical. Along with the fæces, he discharged by stool exceeding black blood, with great pain, and a very offensive smell. After every remedy that could be thought of was administered, he died. In the last stage of his illness there appeared black and livid spots over his body, like those we call *pee-percoorn*, with a cold and fetid sweat.

A few days after, Mr. James à Doorellaar, secretary to the governour, died in the same

way, of a green and malignant kind of dysentery ; many livid spots, resembling the former, appearing on his legs and arms.

OBSERVATION II.

Of the same Epidemic Dysentery.

AT the same time William Wyntgis, a counsellor of the exchequer, and my intimate friend, was seized with the true dysentery, accompanied with great pain ; which continuing five or six days with a high fever, after every thing had been administered, that the violence of the disease, and the urgency of the case authorised, to my inexpressible sorrow, and the grief of all good men, this excellent youth was snatched off. Livid spots were so numerous over his whole body, that you could scarcely place the point of a pin where they were not to be found.

OBSERVATION III.

Of an ardent Fever, Dysentery, malignant Ulcers, &c.

THE reverend and learned John Cavallerius, a preacher of the gospel, was seized about the same time with an ardent fever. An atrabiliary dysentery supervened. Which after continuing some days, there broke forth, under the arm pits, about the loins, the groins, and the neck, pustules and vesicles full of green purulent matter, which eroded the flesh, and at first gave us hopes of a crisis. But the Dysentery not abating, and the fever increasing with a phrenzy, that virtuous and learned young man was removed from the world. Then also, the beautiful children of Adrian Blocq died of the same malignant Dysentery.

OBSERVATION IV.

An Inquiry, whether Epidemic and Pestilential Diseases rage in the East Indies.

I Have produced these few examples, out of six hundred, in order to invalidate the testimony of those who deny the existence of epidemic and pestilential diseases in this country. Whatever name others may call them by, I care not: but I am certain that the dysentery I speak of was contagious, and seized many at the same time, and quickly. Let us consider the state of the case. We were closely shut up by thirty four thousand of the troops of Java, commanded by the experienced Tommagom Bauraxa, a man of distinguished bravery. We had daily skirmishes with the enemy, many of whom were killed, not only in our sallies, but their own assaults: and their bodies, which were thrown into the river, corrupted the waters. The air likewise was tainted by the putrefied carcases of men and beasts that had died of famine or wounds, and lay unburied in the fields. Besides, the waters were vitiated by some thousand baskets

full of the root of *Serpentaria*, which the Indians steeped in the river, in order to divest it of its poisonous quality, and that glutinous substance, which, if we put the water, wherein the root has been infused, into a glass for a few hours, we may observe fall to the bottom like the white of an egg. They likewise used the root toasted instead of rice, of which there was a scarcity in the camp, as they had expected to take us at the first attack, and not provided for a long siege. This will not appear so strange to those who know, that in the West Indies the root of *casavi* is used in place of bread, although the expressed juice of it is immediate poison. But to return to my subject. We must add to the noxious diet, the drinking of salt water. For, by means of the winds which blow from the sea at stated periods, the sea-water is forced into the river, and infects it with saltiness: and we durst not go higher up than the tide, on account of the enemy. Moreover, the river swarmed with worms which were generated in the bodies of the dead. The season was the hottest and most rainy of the whole year, as being from September to the beginning of February, when the weather is constantly

wet, and the fun vertical. By these various causes, I myself was also bed-ridden four months, in the most imminent danger. At first I was seized with an ardent fever, then a dysentery which increased, and for a month past I have been afflicted with the species of palsy called the barbiers: all which, by the blessing of God I have survived, while my wife and sons are still labouring under the disorder.

DIALOGUES

ON THE PRESERVATION OF HEALTH, AND ON
THE DIET MOST SUITABLE IN THE INDIES.

DIALOGUE I.

*Of the qualities of the air, the seasons of the year,
the times of the day, and the winds most com-
mon in the Indies.*

JAMES BONTIUS.

ANDREW DURÆUS.

COME, Bontius, as we have dispatched vi-
siting our patients pretty early this morn-
ing, if you please we shall take a turn with-
out the skirts of the city, before the heat of
the day, and talk together of what sort of diet
is most proper in this country.

Bontius.

A very good thought, Duræus: especially as
we observe daily, in our Dutch hospital here,

that not only the greatest part of those who are recovering from diseases, suffer mortal relapses by the use of bad and unseasonable diet; but likewise that people in good health incur dangerous disorders from the same cause. For, hence proceed obstructions of the bowels, the dropfy, and incurable marasmus. But since the ancients divided diet into the six non-naturals, let us conduct our conversation upon their plan, that we may not appear heretics in physic.

Duræus.

What call you the non-naturals?

Bontius.

Such things as are subservient to the functions of animal life: as air, meat and drink, sleep and watching, motion and rest, what ought to be discharged, and what retained in the body. The afflictions also of the mind. Let us, therefore, speak separately of each of them: and first of the constitution of the air, as being a fluid with which we are in perpetual contact, and cannot exist without.

Duræus.

Very well : but as the heat of the air in this country is extremely great all the year over, I should imagine that this climate was very dry.

Bontius.

Not at all. Nay the air here, as well as in the adjacent islands and continent, is exceeding moist. Many arguments might be adduced to confirm this fact, but I shall mention only one; which is, that even in the driest season of the year in these places, iron, steel, brass, and silver, contract rust and verdegris much sooner here, than in Europe in the most rainy autumns.

Duræus.

You say very right : and we know likewise, that if cloaths are laid up in chests here they soon contract mouldiness, and, if not sometimes exposed to the sun and winds, easily become rotten. But pray explain to me the nature of the air here around Batavia.

Bontius.

The air in the adjacent country is not very wholesome, because heat and moisture are the efficient causes of putrefaction, and it abounds with stagnant water and marshes. Wherefore, when the winds blow from the mountains, they bring to us gross and fetid vapours, not to say poisonous, on account of the multitude of insects, and so infect our air. Hence we ought carefully to guard against the winds which blow from the continent, and that chiefly which breathes from the mountains about the dawn of the morning, because of the tepid warmth of the first part of the night, and the pores of the body being thereby open, which consequently will be more affected by their penetrating quality, than in our own country by the coldest north winds in winter. For this reason, catarrhs and stuffing of the head, are more obstinate here than in Holland. Besides, the penetrating nature of this air produces that miserable species of palsy called the barbiers, which I have taken notice of in my treatise on the method of curing the diseases in India.

Duræus.

You have explained to me the nature of the winds which blow from the mountains; I wish you would now favour me with your opinion of those which blow from the sea.

Bontius.

I look upon these to be much more wholesome than the former. The reason is evident; because they drive the putrefied and marshy vapours away from us, and purify the air: hence they render the spirits more alert, and preserve the humours from putrefaction.

Duræus.

What you say recalls to my mind the winds called the serene, which blow from the mountains in the south of France, the neighbouring parts of Spain, and in Italy, in the territories of Rome and Naples, and which, by a moderate coolness, rather sooth than chill people, who unwarily expose themselves to their influence, and especially strangers. Wherefore, spitting of blood, consumptions, asthmas, and other disorders of the lungs, often incurable, are frequent in these places.

Bontius.

Your remark is just: and I remember that Horace elegantly observes

Matutina parum cautos jam frigora mordent.

Duræus.

But as in all parts of the earth there are annually regular vicissitudes in the state of the air, whence the various seasons are distinguished, I should be glad that you would demonstrate to me the state of the seasons in Java.

Bontius.

I shall do that with great pleasure. As through the whole course of the year, then, the changes which happen here in the state of the air are only in respect of dryness and moisture, we have, properly no more than two seasons in this country. For with regard to the variations of heat and cold, the temperature of the air is for the most part equal, as the sun recedes not much from the equator. We shall therefore divide the seasons into dry and wet, which correspond with our summer and winter.

Duræus.

At what time then do you reckon the summer here to commence?

Bontius.

When continual rains begin to fall. For then the sun, being nearer the equator, strikes us vertically, and exhales the vapours from the sea, lakes and marshes. This season commences with November, and continues till the beginning of May: the rains through that whole period being so excessive and uninterrupted, that people, unacquainted with the country, might be afraid lest the deluge of Deucalion was returning. On the contrary, from the beginning of May to the end of October, the air is perfectly serene and dry, scarce a drop of rain falling during the whole six months. This is quite different from what happens in our country, where, when the sun is receding, the weather becomes rainy, and, as he approaches, more dry. But notwithstanding these circumstances, the ground here is much more fertile, both on account of the quantity of dew which falls in the night, and the temperate nature of the mornings and evenings,

which are as mild as the spring: but of that afterwards.

Duræus.

What season of the year do you think the most healthy?

Bontius.

From what I have said, it must be plain that the rainy season, or summer, is the most unhealthy, as the heat and moisture of the air are deservedly reckoned by naturalists the efficient causes of putrefaction. For unless the morning and evening breezes, which prevail in that season, and the thick and cloudy constitution of the air, protected from the heat, this country would be uninhabitable. But these subjects are learnedly and amply treated of by Joseph à Costa, in his natural history of the Indies, which may be consulted. On the other hand, in the dry season, and during a clear state of the air, the people here are healthy. For then, too, the winds blowing with greater coolness, ventilate and purify the atmosphere still more.

Duræus.

From what you observe of summer and winter depending on the vicinity and absence of the sun, I find that we have winter in this part of India while Holland is flourishing with spring and summer: and, on the contrary, that summer is here, while winter possesses our native land.

Bontius.

It is so.

Duræus.

But what think you of the times of the day, and their temperature?

Bontius.

I shall divide the times of the day into morning, forenoon, afternoon, and evening, under which we may comprehend the night. In regard to the qualities of each of these, the morning and evening are the most wholesome parts of the day, and most proper for exercise or labour. Because then the winds blowing from the sea and mountains, ventilate and cool the air. But to begin with the morning. That

I call the portion of the day extending from five o'clock till nine, when soft and gentle gales refresh the air, as the breezes of May in Holland. The forenoon continues from nine to twelve, during which the heat is extremely great, but from that period till four in the afternoon, is moderated by breezes from the sea. We shall include under the evening the space of time betwixt four in the afternoon and six, or a little past seven, when the sun sets. If any business, therefore, is to be done in the day, the most proper time for it is the evening and morning. Going abroad in the forenoon ought to be entirely avoided, on account of the violent heat; the effects of which are so manifest, that a person will find himself more fatigued in a quarter of an hour at that time, than in eight times the space at any other. I would advise to abstain also from business out of doors, from twelve till four in the afternoon: however, that time is not so unwholesome as the period preceding.

DIALOGUE II.

Of Meat and Drink : particularly Flesh, and Fish.

Duræus.

HAVING explained the qualities of the air in these parts of India, together with the seasons of the year, the hours of the day, and the temperature of the winds, it would give me great pleasure to know your opinion in regard to the most proper times of eating.

Bontius.

I shall chearfully comply with your request. Know then, that in general the breakfast should here be the best meal, the dinner should be moderate, and supper light : and that I may not seem to impose these rules capriciously, I shall tell you the reason.

Duræus.

Pray do.

Bontius.

It is certain that in this climate the stomach is best disposed for performing digestion in the morning, on account of the cold of the preceding night. I advise a moderate dinner, lest while we take a nap after it, on account of the heat, the stomach, being too much loaded with food, should produce crudities, and disorders thence arising. For many diseases here are owing to a cold cause.

Duræus.

Well, I cannot conceive how cold diseases should predominate in hot countries.

Bontius.

But when you examine into the cause you will be less surpris'd. For, by the constant evaporation of the spirits through the pores of the skin, the bowels which perform digestion are deprived of heat, and hence their concoctive faculty being weakened, they transmit crude and undigested humours to the mesentery and liver, and afterwards through the whole habit of body. It is not strange, therefore, that people who live in the northerly climates should be more lively than the inhabitants of the torrid zone : for the cold

of the air increases the internal heat of the body .
Hence Hippocrates observes, that *the belly is hotter in winter*, and on that account says, elsewhere, that *people ought to eat most in the winter*.

Duræus.

You have fully satisfied my doubt : let us now, if you please, talk of the kinds of food that are either hurtful or advantageous in this country.

Bontius.

Come then, I shall regale you with an imaginary dinner, as I believe nobody has invited us to day.

Duræus.

But don't make camæleons of us ; you know they are said, though falsely, to live upon air.

Bontius.

No, no : instead of empty air, I shall fill your ears with agreeable conversation. Let us, then, distinguish food into different classes, and in the first place talk of flesh. The most wholesome of that kind is the flesh of hens, with which this island abounds ; birds of the woods and mountains, as turtles, pidgeons, quails ; of the smaller

fort, sparrows, chaffinches, fig-peckers, and thrushes, with all which the woods and fields plentifully supply us. The ducks, geese, and other water fowls of this country are likewise excellent.

Duræus.

I am surpris'd to hear you rank the flesh of these aquatic fowls among wholesome meat, as they are esteemed the very opposite in our country, because living in stagnant lakes, and marshes, they feed on slime and dirty weeds.

Bontius.

You say right, but the case is different here. For, in this country, such birds live not in lakes and marshes, but in the rivers, on which account their flesh is much better. Besides, they may be brought up at home upon rice and crumbs of bread, and then their flesh becomes as delicate as that of hens and capons. Here also are cranes and herons, which are not despicable food.

Duræus.

What kind of flesh do you reckon the next in goodness?

Bontius.

That of goats : for we must abstain from sheep here, on account of their scarcity. Then, veal and beef, the best of which we have wild in the woods. The flesh of the buffalo is not at all contemptible ; young ones I mean : for the flesh of the old is so hard as not to be chewed even with the iron teeth of the parasite Plautinus.

Duræus.

But what think you of the flesh of wild beasts ?

Bontius.

You ask me a very proper question. Of these, then, I reckon the boar to be the best ; even the tame hogs here are excellent, and of easy digestion, different from what they are in our country, and are prescribed very properly for the sick. We have here likewise a great many stags. All these wild creatures the soldiers shoot with their muskets, and bring daily to the market.

Duræus.

I know : but leaving this subject, let us next talk of fish.

Bontius.

In order to do that with more precision, we shall speak separately of the fishes of the sea and fresh water. Among the former, that fish which the natives call *cacap*, is in my opinion the best: it is a species of carp, named by the Dutch, *steenbraassens*, and which is sometimes taken of so large a size, as to equal the cod fish.

Duræus.

Are there here any of the large kind of cod which the Dutch call *cabeljau*.

Bontius.

There is a species of them taken here, which our sailors call *Jacob Eversten*, on account of black spots and excrescences scattered over its yellow skin, and resembling, as they say, the complexion of a soldier of that name. There is here, besides, a great quantity of carp, of various figures, broad, round, and oblong; of which the red are the best. We have also most delicate scars, that serve us instead of perches, and which are described by Belonius in his observations. A kind of salmon is likewise taken, which the Maldivians call *Jean-Banda*, signifying a fish of Banda, as

being caught in great plenty on the coast of that island. It differs from the salmon only in colour: for what is red in that, is white in the fish of Banda. But the flesh of ours is more dry, and on that account, more wholesome, if we believe Pliny, who declares, that the fat of all fish is bad, and that of eels the worst.

Duræus.

What think you of the gilt heads, the corco-vadæ, bonitæ, and these kinds of fish?

Bontius.

I am of opinion that all these are species of the tunny fish, and dolphins, both on account of their great velocity in swimming, by which they can surpass a ship in full sail, and also because they leap to the height of five or six feet from the sea, to catch water-fwallows, or flying fish, which have a good flavour, and when their wings are taken off, resemble herrings, both in shape and taste. But among these dolphins the most excellent is the gilt-head, called by the Portuguese, dorado, because of its golden colour. The flesh of the others is harder, and consequently more difficult to digest. But with good stomachs they agree very well; since, as Celsus observes, healthy people need not very delicate diet.

Duræus.

What of the flat sea fishes? shall we consign them entirely to oblivion?

Bontius.

I meant only to reserve them to the last; for without question, they are amongst the most wholesome kinds of fish. The principal in that class are, the rhomboides, soles and turbot, of which the rhomboides afford the best nourishment, next the soles, and lastly the turbot, which were so luxuriously sought after by the Romans, that hence the ingenious Juvenal inveighed, with great poignancy of satire, against the cruel and trifling age of Domitian. We have likewise rayas, smooth and spotted; which, by how much the younger, are of easier digestion: for, from the older I would advise to abstain, as from the lamia, and larus fish *hayen*, which, by their extreme sharp and crowded teeth, have destroyed such numbers of sailors, unwarily swimming in the sea. The sea pastnaca, by the confession of the Chinese fishermen, carries a poisonous sting in its tail, which being cut off, the fish is eatable, but heavy and unwholesome. Therefore I would leave to the Chinese and Moors their favourite

dainties, contenting myself with the fore-mentioned flocks of Neptune, as Plautus calls them.

Duræus.

I have now had my full of sea fish, and wish that you would next present me with those of the fresh water.

Bontius.

Immediately. First then, here is the salmon trout, or round carp, which, both in flesh and taste, I think, exceeds those of our country, because here it inhabits the rivers, not lakes and marshes, as with us; and as I formerly gave the preference to the Indian ducks, so must I likewise to these fishes, they having less of a slimy taste, than the trouts of the same species in Holland. They are caught sometimes of so large a size, white skin, and delicate flesh, that nothing can be finer. Besides these, there are in the channels of rivers, the pike, which, however, whether they are sea or fresh water fish I am doubtful. But those caught in the sea are certainly larger, of a white skin, and most delicious taste, either roasted or boiled. Mulletts also, *harders*, and the species of fish, called in our country *boutinck*, are taken here in so

great plenty, that the poor live almost entirely upon them.

These two kinds of fish, at stated periods, namely, from October to April, are fat and extremely delicious, by reason of the rains which sweeten the salt water (for these fish are likewise taken in rivers). But in a drier season, their flesh is harder and more prickly. Bleaks too, like our *voornen*, are taken here in the rivers, of excellent taste and nourishment. Also large *congr*, *congerael*, are sometimes caught in the mouth of rivers, but oftner in the sea; for which reason, I should be inclined to rank them among the sea fish. I shall now mention the more unwholesome kinds of fish. Among these are eels, the skin of which, on the upper part, is extremely black, and below, of a dirty yellow. It is certain that they copulate with snakes; and though many people reckon them delicious eating, yet for my own part, I dislike them, both for the reason just mentioned, and the nauseating fat with which they abound. There is, besides, a fish, covered with very hard scales, which the Malaians call *jean cabosch*. From the figure of the head, and other parts of its body, I take it to be a river-mullet: it lives in a slimy bottom, and favours

not obscurely of its origin. Moreover, we have a species of the tenea, *seelt*, of a smooth skin, without scales, taper like an eel, and furnished with two wings. And lastly, great quantities are taken here of the fish which the Dutch call *puytael*, from the head of a toad: but as to people who are fond of these kinds of fish, together with river lampreys, I envy not their taste. I could enumerate many other species of fish, but shall only mention the crab fish, lobsters, oysters, and large shrimps, which, besides every other kind of shell fish, are excellent in this country. Allow me to add the amphibious tortoises, with their delicious substance, if we may credit those who affirm to have eat of them: but it is probable that such dainties would scarcely have been relished without a very sharp appetite. I shall rank the tortoises among those medicines, or rather medicinal aliments, which are proper for pthifical persons, and such as labour under any empyema; as by their glutinous quality they tend to consolidate the lungs.

DIALOGUE III.

Of Rice and Bread in the Indies. Of Drink, Wine, and Arrac. Of Drink made of Water, Sugar and Tamarinds. Of natural Liquors drawn from Trees.

Duræus.

AS prepared rice is much used in these places instead of bread, I beg to know your opinion of that production, especially as it is a solid kind of food, and ought, as a basis, to support the other aliments, and prevent their fluctuating in the stomach.

Bontius.

I always take a pleasure in informing you of my sentiments. If, as usual, a sufficient quantity of wheat was imported to us from Japan and Surat, I would very readily dispense with rice; because the bread made here of wheat flour is nothing inferior to that in our own country, and

in my opinion, affords better nourishment than rice. But if there should be a scarcity of wheat, then that rice is to be chosen which is the whitest, of a clear colour, and weighs heavy: and when baked, it ought always to be let cool before it is used. For experience evinces, that hot rice is not only hurtful to the stomach, but also to the brain and whole nervous system: and from the gross and dry vapours rising to the head from this aliment, the optic nerves are frequently so much obstructed as to induce a total blindness; of which disorder I have treated in my method of curing the diseases in India. Hence you will seldom or never see the Javans or Maldivians eat hot rice: because the Indians, of all people, are the most careful of preserving their health, and observe a regular and temperate course of diet.

Duræus.

But hark! friend: you present me with too dry a repast—*Nos miseri aremus, nec quod potemus habemus.* “We are fit to choke of thirst, and “have nothing to drink.” Pray, give us something to drink.

K

Bontius.

You are very right. Indeed my throat is become dry with speaking: but as we have no other liquor, let us take a draught out of the river; and first, we shall speak of pure and simple water, for that is a drink which is common to us with every other creature.

Duræus.

What think you, then, of this river, which flows through our Batavia?

Bontius.

I think the water is of no bad quality, if drawn a little higher up the river: for the mouth of it is tainted with a saltness by the tide; and this was partly the reason that in 1628, when we were close besieged by the Javans, and durst not venture far from the garison, many of us fell into the dysentery by drinking salt water. I ought, indeed, to add, that the dead bodies of the enemy who were daily killed in our sallies, affected with putrefaction, by swimming on the surface of the river, not only the water, but the air.

Duræus.

But may we not drink of factitious liquors here: pray, what think you of that kind?

Bontius.

Although we don't drink ale, it is not that it cannot be brewed here, but because on account of the heat, it would soon become sour. Otherwise we might have as good ale as in our own country: for, as I observed before, we are plentifully supplied with wheat from Surat, and malt may be made even from rice. Of that I have seen an instance at Mareschall's an eminent merchant in this city, who made ale of that grain, noways inferior to the Dutch in point either of strength or taste. However, by the heat of the air it soon became sour: and certainly that liquor is not wholesome in this country; though what is prepared in the following manner, is perfectly so.

Take a vessel well girded with iron hoops, containing eight gallons or more, according to the number of the family: fill it with river water, into which put two pounds of Javan black sugar,

four ounces of tamarinds, three citron apples, cut. Let the whole be placed in a cool situation, well covered, and ferment for twenty-four hours. What is surprizing, it boils without any fire under it, in such a manner that people at a distance may hear the sound: just as ale in our country is boiled with a strong fire. It then throws a scum to the top, which is taken off by removing the cover. This is our daily drink: it is very agreeable to the palate, and not near so heavy as the former. And for the sake of a jest, I have made a great many people, who had newly come here from Holland, depart in the belief that I had entertained them with English or March ale, the taste of which it will resemble still more if you throw into the vessel a handful of cloves.

Duræus.

But what is your opinion of the drink made here of six parts of water, and two of wine, fermented in the same manner in narrow stone jugs.

Bontius.

That drink is limpid and cold, indeed, and for that reason, useful at meals: but I think it is not so proper at other times, on account of a penetrating acid, which makes it injurious to the breast.

Duræus.

But which of the wines here do you reckon the most wholesome; the French or Spanish?

Bontius.

Some prefer the French; but in my opinion they are wrong: for I think that either Spanish or Cretan wine is more suitable for this climate.

Duræus.

But is it not contrary to reason, to give strong and spirituous wines in so hot a climate?

Bontius.

When I explain to you the expediency of it, perhaps you will be of my opinion. The heat is so great here, especially from ten in the forenoon to three in the afternoon, that people sweat a great deal; whence the innate heat of the

body is weakened, and the organs serving for the digestion of the food and chyle become more cold, different from what happens in northern countries, where, according to the maxim of Hippocrates, the bowels are warmer in the winter, the cold of the air augmenting the inward heat of the body. This opinion is farther confirmed by the experience of merchants who travel through the desarts of Arabia into Persia or Turkey, who, during the greatest heats, slake their thirst most easily with a draught of brandy, or the strongest Persian or Spanish wine. For, if they should constantly drink water to their thirst, they would without question fall into a cachexy and remarkable tumour of the belly, and in the end into a dropsy itself. Add to this, that all the French wines brought here from Holland are impregnated with the fume they call *lucht*, which as it consists of an arsenical sulphur, and colophony, gives the wine a pernicious and caustic quality, though it makes it retain its flavour a longer time. Whence I have seen some people here fall

into a mortal dysentery, from only taking a hearty draught of French wine.

Duræus.

From what you have said, I find that you are no enemy to adust wine nor the Chinese arrac.

Bontius.

I approve of the moderate use of them: but I condemn the abuse. If therefore, a person, for the sake of strengthening his stomach, should take two or three ounces of that liquor morning or evening, I would say he did not do wrong: but if French brandy can be had for that purpose, there is certainly no occasion for arrac. And if there is a scarcity of the former, that spirit is to be preferred which is made of the liquor contained in the Indian nut, and of the tree itself, distilled with rice. But that which is prepared by the Chinese, the most avaritious and crafty wretches on the face of the earth, of that excrementitious marine production which the Dutch call *quallem*, is to avoided as death itself. For that vile ingredient is of such a burning heat, that the bare touch of it raises vesicles on the

skin, and hence ulcerations of the lungs, spitting of blood, consumptions and death ensue : and this is the reason why, as Plautus says, men live so short a time ; because they tear and abrade their bowels, as with a heckle or a harrow.

DIALOGUE IV.

Of natural Drinks taken from Trees, called in India Toruvvat and Saguër, and of the Liquor contained in the Indian nut.

Duræus.

IN our conversation hitherto, you have given me the highest satisfaction ; and I should now be glad to know your opinion of those liquors which are taken either from fruits or trees.

Bontius.

You are to know, then, that there are three kinds of such liquor. The first is contained in the cavity of the Indian nut ; the second is taken from the flowers of the same tree ; and the third, which is very common in Banda and the other Molucca islands, distils from a tree not unlike the Indian palm. This liquor is by the natives called saguër. These three are very frequent over all India. It may be affirmed of the whole, in general, that they are endowed with

a cooling quality, and hence are injurious to the nerves if too copiously drank, especially when the body has been heated by exercise or the sun. These drinks, therefore, ought to be sparingly taken : for it appears, that, by the frequent use of them, and particularly of that called *fa-guër*, not only obstinate diarrhæas have been induced, but also the species of palsy known by the name of the *barbiers*. Hence it is, that in Banda, and the other Molucca islands, especially those subject to us, most of the people are cachectic, and of a pale yellowish colour : and scarce one of our Batavians escapes the fore-mentioned palsy, which is also experienced by the Portuguese, who are far more temperate, not only in this kind of drink, but in every other part of diet.

DIALOGUE V.

Of Aromatics, and their use—where some things, imperfectly treated of by Garcias ab Orta and other writers, are explained.

Duræus.

You have regaled me with a very plentiful repast in idea ; but it is simple, and not seasoned with any spices, although aromatics are nowhere produced in greater abundance than in Java.

Bontius.

How nice you are ! Don't you know that nature is contented with simple food ? However, that I may not seem to pass over these things through negligence, I shall not leave you unsatisfied ; and I shall speak of aromatics not what I have learned by hearsay, but what I am certain is true from my own experience. The qualities of pepper are so well known over the world, that it is needless to say much of them. If we consider the manner in which pepper grows, we

must allow it to be a species of convolvulus, or vine grub : for it climbs up trees and poles exactly as that plant. The clusters of it are pickled with brine and vinegar, to excite an appetite, and are served to table here with roast or boiled meat. In the same manner the inhabitants pickle the recent roots of ginger, galangal, the fruit of the mangos, carambola, billingbing, turmeric, with young cucumbers, melons, and pumpions, which serve here instead of capers and olives, though at the same time we are in no want of these delicacies, as we can be annually supplied with them from Persia and Surat. What Garcias ab Orta relates of the opinion of the Javans and Indians, concerning a cold quality in pepper, is ridiculous. Such a doctrine can be founded only on the same principle with that of the ancient sophists, who were so bold as maintain that fire was cold, and ice and snow hot. To the writers above referred to, I would reply with Aristotle, that experience was the only argument to be used against their affirmations. But perhaps they meant, that, by too liberal a use of pepper, the native heat was thrown out, and weakened internally, and so the temperament of the body rendered cold. But I believe the Indians

reason not so deeply. They have the same opinion of cloves as of pepper.

Duræus.

What think you of mace and nutmeg?

Bontius.

It is my opinion that they ought to be sparingly used in these places : for they load the stomach with their oiliness ; and by the vapours which they send to the head, induce drowsiness and sleep. Nay, I have seen some whose lives were not a little endangered by too free a use of nutmeg ; and have lain for two whole days, mute and immoveable, like those in a carus ; a manifest proof that the brain and nerves were greatly affected. In the island of Banda, they also make a pap of the green bark of the nutmeg tree, which they preserve with sugar, and then it exactly resembles in taste the sour apples, which are preserved in the same manner in our country. And we too here in Java make a very palatable pickle, of much the same sort, of the bark of the nutmeg salted, and previously macerated in water. But experience demonstrates, that it also gives a

tendency to sleep, for which it ought to be used with caution.

Duræus.

I perceive, then, that you do not approve of much spices along with meat.

Bontius.

I do not: however, I except cardamoms, which, by their mild and agreeable warmth, may be chewed without any bad effect. That plant grows plentifully in Java, and is much used by the Malaian women, in dressing their meat.

Duræus.

The *calamus aromaticus*, which is here in so great abundance, pray is it not made use of in the kitchens?

Bontius.

Yes, and very deservedly, though Garcias ab Orta acknowledges no other use, either of it, or the sweet smelling reed in India, than for bedding horses: but had he been as diligent in investigating the qualities of aromatics, as discerning in

reading Arabian physicians, he would not have been ignorant of the uses of that plant: for over all India, scarce either fish or flesh is dressed without a bit of *calamus aromaticus*, or the sweet smelling reed along with them, both to improve their flavour, and strengthen the stomach. The nard, which grows here in the mountains, I hold in the same esteem. Infused for some days in vinegar, as the dry flowers of marygold with us, it admirably resists the putrefaction of the humours. I have never yet seen green nard, because the mountains here are inaccessible, on account of the number of tygers, and Javan robbers.

Duræus.

You said before, that the root of turmeric also was made use of in dressing meat.

Bontius.

And so it is. Garcias ab Orta calls that root *crocus Indicus*, Indian saffron; not that its filaments have any resemblance to the British saffron, but because it dyes a yellow colour. Garcias, who never saw these roots growing, gives it as his opinion, that they cannot be taken into the

body without producing mischief: but he may have positive evidence from me to the contrary. I, who have seen the plant a thousand times, and elsewhere described it, do not only affirm that it may be advantageously mixed with meat, but have also shewn, in another book, that it is of excellent use in medicine. What I have said may be sufficient on the subject of aromatics.

Duræus.

Often have I wondered to see the Malaians and Javans, and the Chinese too, eat so greedily of the fruit of the mandrake (which the Portuguese call Pomo d'oro) as they are cold in the greatest degree.

Bontius.

Softly. Don't you know that they mix with them the fruit of the ricinus Americanus, or America feeds, which the Malaians call lada Chili, which is to say, the pepper of Chili? Thus they correct the extreme coldness of the one by the excessive heat of the other; and with the addition of a little vinegar and oil, eat them both to fish and flesh, to which they give an agreeable enough relish. There are some peo-

ple who chew the ricinus, as tobacco : but for my own part, I should not chuse to join them. For, once when I tried it out of curiosity, I exco-riated my whole palate and tongue by its caustic pungency. Hence we may see the force of habit.

DIALOGUE VI.

Of Fruits.

Duræus.

AS our entertainment seems now to draw to a close, I hope you don't intend to let us go without a desert.

Bontius.

By no means. Let us therefore begin with fruits, of which we have here great variety. Those are the best which have an astringent taste; and the worst are such as are sweet to the palate. But let us taste a little discourse of each of them. The first that presents itself is the fruit of the mangos, which grows upon a very high and spreading tree, like our oak. This fruit, when unripe, is of an extreme acid taste. After the bark and shell are removed, a pap is here made of the inner substance, which

has so much the taste of our apples, or gooseberries, that scarce a person could distinguish any difference. The fruit, thus prepared, is very beneficial in strengthening the stomach and bowels: when fully ripe, it is not so wholesome, but if eaten in moderation, can do no hurt.

Duræus.

What is your opinion of the Durios, Jaacæ, and the other fruits that are covered with prickles?

Bontius.

The Durios, as they have a garlic smell, are apt to be disagreeable at first tasting: however, they deserve to be reckoned among the most wholesome fruits in India: for they are diuretic, promote perspiration, and discuss flatulence; though, if taken in too great quantity, they inflame the blood, and produce pustules in the face. We may place them among the alimentary medicines, of which I have treated in my method of cure.

Duræus.

I agree with you: but in what rank do you place the ananas, that most fragrant and delicious fruit?

Bontius.

If its other qualities corresponded with the epithets you have bestowed upon it, I would boldly affirm that there was not a nobler fruit in the universe: but it is of so caustic a nature, that the juice of it erodes steel and iron; hence, if not macerated for some time in wine or water, it excoriates the palate and tongue, and causes a horrible cholera, and frequently a mortal dysentery.

Duræus.

As to the Jaacæ, I imagine their sweet taste will be sufficient to recommend them.

Bontius.

So far from that, I think they are extremely unwholesome; as their flesh is tough and hard, and discharged by the intestines, almost as unconcocted as it is swallowed: whence it produces crudities in the stomach and bowels,

which beget obstinate and troublesome diarrhæas, and afterwards a tenesmus that is often concluded with a mortal dysentery.

Duræus.

Pray what fruits were they which you commended a little ago for their astringent taste?

Bontius.

These were, first, the jambos fruit, of a most beautiful white colour, inclining to purple. They have almost exactly the taste of the capræ vitis. They greatly astringe, and on that account are a good remedy in dysenteries.

There is also brought to us a fruit, called lances, which grows in clusters as the grapes, of a round shape, and about the size of a plum. It bears a kernel, which is covered with a white substance of a vinous taste, resembling the uva ursina in our country. Like to that, in taste, is the fruit called by the Javans *boa rampout*, signifying hair, because the bark surrounding the fruit is covered with some small threads. The kernel perfectly resembles that of the lances, and agrees with it in its cold quality. The

bark of the lances, however, emits a milky juice, which is very bitter and corrosive. There is likewise here the fruit called by the natives billinbing, of the shape of a young cucumber, and so extremely acid to the taste, that it may be said to be sourness itself. It is remarkable, that if a person's teeth should be set on edge by eating any other acid fruit, immediately on tasting the billinbing, the sharpness is no more felt; for the same reason, I suppose, that in other cases the sense of a small degree of pain is extinguished by the severity of a greater.

Duræus.

What say you of our Indian figs?

Bontius.

Prosper Alpinus calls that fruit musa, the Malaians banana, and the Javans pyfang. It is of an agreeable taste, resembling much the pear, which, on account of its sweetness, the Dutch call *Suycker peren*. If this fruit is eaten crude, it is very flatulent and nauseating, so as sometimes to make people, unaccustomed to it, vomit. The best way of taking it, is with bread

and boiled rice, adding a little cheese, without which it is apt to produce the dysentery and cholera. Just as in France and Spain, a person who eats a quantity of grapes without any bread, is certain of falling into a dysenteric flux. The most wholesome way of eating this fruit, is to dress them in a frying pan with eggs, by which they become beneficial in consumptions, asthmas, and other disorders of the lungs. Externally applied to inflammatory tumours, they promote suppuration.

Duræus.

But where are the mangostan, jambos, and Bengal quinces?

Bontius.

I reserved these for the last course, that we might conclude our entertainment with the Chinese tea, and, according to the custom of the country, give you some syrii pynang. The jambo, then, is of the size of the plumbtree, and excepting that its leaves are something shaper in the point, would entirely resemble it. It bears a red flower, and a most beautiful white fruit, inclining a little to purple. The taste is astringent, and much

like that of the tendrils of the vine; its relish not fully corresponding with the beauty of its appearance. It is of a cold nature, and therefore useful to allay the heat produced either by exercise or fever. Garcias ab Orta describes the Bengal quinces b. II. c. 14. I shall therefore only add, that the kernels are taken out of them, and preserved whole, either with sugar, or brine and vinegar. We are supplied with them out of the Portuguese ships, which trade from Surat, and the Coromandel coast to Malacca. For no people in the world are so much noted for making preserves as the Portuguese: so that it is a common proverb over Italy, that the Indians spend their money on perfumes, and the Portuguese on preserves. The taste of the quinces resembles much that of our large autumnal pear, commonly called *winter-peren*. The fruit mangostan has so delicious a flavour, that in my opinion, it excels all the fruits in the Indies. The bark of it is exactly like that of the pomegranate tree, unless that on the upper part, it has a crown like the poppy, by the number of stalks in which is determined that of the kernels, which are covered with a white substance, of a sweet vinous taste, excelling the strawberry and ananas.

Duræus.

I hope you have not forgot the Chinese drink they call tea. What is your opinion of that ?

Bontius.

The leaves of the tea shrub resemble those of the common daisie, and have small notches in the edges. The Chinese method of using them is, to throw a handful of the leaves into a kettle of boiling water, which is let remain upon the fire a sufficient time. The decoction so made is of bitter taste, and is sipped warm. The Chinese regard tea as a sacred drink ; with it they welcome strangers, and with it they take leave of their guests ; nor do they think they have fulfilled the laws of hospitality without giving it. They esteem it in the same degree as the Mahomedans do their *caveah*. It is of a drying quality, and hinders sleep by sending up vapours to the brain ; but it is of advantage to the asthmatic. Why need I mention oranges, citrons, pomegranates, and other such fruits, which are here in great abundance, as they are so well known in Europe ? Of all these we make syrups, which, mixed with water, afford pleasant and

refreshing drink, both to the healthy and the sick. I say nothing of vines, which, if carefully dressed, yield ripe fruit four times in the year. Wherefore, if we have not daily heat, we have, however, perpetual spring and verdure, and the real gardens of the Hesperides.

DIALOGUE VII.

Of Pot-herbs, Pulse, and some esculent roots in India.

Duræus.

HAVING now finished our imaginary entertainment, as we are returning home, let us at least gather a few pot-herbs for supper.

Bontius.

Tell me what you chuse to have first.

Duræus.

I should be glad to know something of what the people here call batatas (potatoes).

Bontius.

They are full of nourishment, but abound with a melancholic juice, not unlike that of the chesnuts in Europe, the taste of which, these roots, either when roasted under the ashes, or boiled with flesh, very much resemble ; only they

are a little softer, and more moist. But if they are sprinkled with salt, oil, pepper, and vinegar, they serve instead of red beet in our fallads.

Duræus.

We have a great many garden radishes here. What think you of them?

Bontius.

Of these you know we have two kinds: the first is short and round, or resembles a cylinder, and is used in place of turneps. The other is more long and tapering, like our radishes in Holland, and is eaten crude, as there, with bread, butter and salt. But the radishes here are much better than in our country; being neither so woody, nor worm-eaten, but more relishing.

Duræus.

What opinion have the Indians of pot-herbs?

Bontius.

They hold all herbs whatever in great esteem. For most of the people who come here from Surat and the coast of Coromandel, live almost

entirely upon vegetables, after the manner of Pythagoras ;

— Cunctis Animalibus abstinuit qui,

Tanquam homini ac ventri indulgit non omne legumen.

So these people still abstain from red beans and whatever among the herbs is of a red colour. Hence it happens that people, who in other things are very dull, have yet a perfect knowledge of herbs and plants ; so that if the learned Pauwius, the greatest botanist of our age, could rise from the dead, he would be amazed to find that these Barbarians could instruct him in the science. The Malaians call all esculent herbs by the name of *seir*, and all medicinal herbs, and poisons, by that of *oubat*. To confine our subject within as narrow limits as possible, I shall just enumerate the other herbs made use of in diet in this country. Here, then, have we both kinds of beet, red and white, and parsley in great abundance. All kinds of lettuce, anise, fennel, and we have lately begun to cultivate asparagus with success. Water-melons, also, pumpions, cucumbers, citruls, and all sorts of creeping fruits, are produced here : but as they abound in our own

country, I shall only say of them, that their seeds are used for the same medicinal purposes as they were by the ancient Dutch. Nourishing and flavoury, though flatulent, leguminous roots are found here both in bushes and large trees. We have also a fruit which the Malaians call *focqui*, of about a foot and half long, round, and in thickness equalling a man's arm. It is dressed with wine, pepper, and vinegar, as the artichoke, and is not inferior in taste. You may see the figure and description of it among my exotic plants, which I shall endeavour to let you have next year. What I have said may suffice of pot-herbs: let us now turn our thoughts to exercise and the passions of the mind, that we may at length bring our conference to a conclusion.

DIALOGUE VIII.

*Of Exercise, Sleep and Watching, Blood-letting, Purg-
ing, and the Passions of the Mind.*

Duræus.

WHAT think you of the other part of
diet, which consists in motion and rest?

Bontius.

To be short—exercise ought, without all doubt,
to be moderate in this country, as the constitu-
tions of the people are relaxed by the warm and
moist temperament of the air: and it should be
taken in the mornings and evenings, when the
heat of the sun is not intense. At these times
proper walking is beneficial, as also riding on
horseback, or sailing in a barge upon the rivers,
through flowery meads, and woods of perpetual
verdure.

Duræus.

Pray tell me your opinion of sleep, and the proper time of indulging it.

Bontius.

I have nothing farther to say of sleep, than that it ought to be moderate. But I am afraid of appearing partial should I affirm, that a sleep in the middle of the day is beneficial to the inhabitants of this country. However, I remain in the opinion, that a meridian nap is not only useful here, but almost absolutely necessary. And as the air is so hot at that time of the day, that a person will be fatigued, and sweat, with the least motion, what should hinder him from passing an hour or two in reading some agreeable book, or indulging a gentle slumber? It is certain that the Spaniards, Italians, and French use that practice, though their countries are nothing nigh so hot as ours. The case is otherwise in the northern regions, where people eat a more hearty dinner, and digestion is promoted by gentle motion: but here, as we must dine more sparingly, sleep hinders not the concoction of the aliments, but rather assists it.

Duræus.

What think you of the retention and evacuation of the humours ?

Bontius.

It is not to be expected that I should speak of such purging and blood-letting as are used in the cure of diseases ; but only of such as are instituted for the preservation of the health. Therefore, if the belly is bound, it may very conveniently be opened by excellent laxatives, with which the country supplies us ; such as tamarinds, and the pulp of cassia. Or, if a stronger medicine be required, you may add to these the extract or syrup of rhubarb. With regard to blood-letting, the expediency of that operation is to be determined upon the same principle here as in our own country ; namely, by the absolute or relative fulness of the vessels, or the plethora ad vasa, and ad vires. If the former exists, blood is sometimes to be drawn plentifully upon the authority of Hippocrates. If the latter is the cause of any complaint, venæsection ought to be performed once or twice, that the distended organs may be relieved from oppression, and the balance of the circulation restored. If the belly should

be loose, and a diarrhæa or dysentery apprehended, some syrup of the juice of pomegranates, or a decoction of its bark may be taken. But as these injunctions relate properly to the cure of diseases, we shall postpone them till a more convenient opportunity.

Duræus.

Something yet remains to be said of the passions of the mind.

Bontius.

Much have physicians written on these and the method of moderating them: but as the emotions of the mind are scarcely within our controul, I shall only say of them, with Horace,

qui nisi servit

Imperat ; hunc frænis, hunc tu compeſce catenis.

Who but will acknowledge that what is easy for one, may be difficult to a person of another temperament? Wherefore, to lay down any precise rules concerning the passions of the mind, would favour more of a trifler than philosopher. Besides, we ought now to think of breakfast, lest we fall into the predicament of Plautinus, and

while we are discoursing of restraining the passions, ourselves should be incensed by hunger. Let us, therefore, get home to breakfast, before the day becomes intolerably hot.

Duræus.

You advise well : for I am sensible that the belly has no ears : and, if you please, we shall make for the town.

Bontius.

With all my heart.

18. 1. 1900

100

ANIMADVERSIONS

ON

GARCIAS AB ORTA.

ANNE D'ARLON

и о

СВЯТЫЙ ПАВЛЪ

T O

MY MOST DEARLY BELOVED BROTHER

WILLIAM BONTIUS

Burgo-master of LEYDEN.

AS soon as I arrived in the East Indies, I applied myself not only to attain a knowledge of the herbs growing here in Java, but likewise to acquire a more perfect idea of the aromatics in which our part of the country is the most fruitful. Towards this end, I hoped for great assistance from the writers who had treated of the subject; particularly Garcias ab Orta, some time ago Physician to the Vice Roy of Goa, and Christopher a Costa. I began, therefore, to read them more carefully: and soon found that they had related many things

upon the authority of others, which, by ocular examination, I discovered to be false. It must be acknowledged, however, that both these men, especially Garcias ab Orta, have described things with fidelity, as far as their own experience could lead them. I write not these animadversions, therefore, with the view of reprehending those authors, and invidiously detracting from the merit of men more knowing than myself. My design is only to shew, that the evidence of one ocular witness is superior to the testimony of ten persons, who relate their facts from auricular information; which is, tam ficti, pravique tenax, quam nuncia veri. Nicholas Monardes has written of many things with sufficient accuracy, though sometimes he is guilty of neglects. The diligent Charles Clusius has also greatly improved botanical knowledge: but, with regard be it spoken, his labour is often useless, as will afterwards appear. For these reasons, and that I may not seem to live to myself alone, I shall faithfully lay before my countrymen such observations as I have made with my eyes, and ascertained by daily practice in these parts: though I am conscious, that in so doing, I shall sacrifice the reputation of the writer to the benevolence and utility of the design. Such as they are, then, I deservedly offer them to you, my dearest brother, both as I know that you have al-

ways been a diligent reader of those authors, and I acknowledge you as the maker of my fortune. For you, among others, was my counsellor, that leaving my native country, where the profits of physic were small on account of the multitude of medicasters, I should make for the fertile plains of Java, where, to speak ingenuously, virtue is held in some greater esteem. Accept, therefore, these animadversions, as a sincere, though small token of my brotherly affection for you: and next year, if I am in life, you may expect a full description of plants, shrubs and trees, with an accurate delineation of each. Which exotics, unknown in our country, a curious inquirer into nature will, perhaps, not a little esteem. To conclude, if these animadversions shall be judged worthy of being committed to the press, together with my other tracts, namely, my method of cure, and Indian diet (to be diligently observed in this country), and which I have subjoined, let them see the light: but if they appear not to be sufficiently polished, keep them at home with yourself, as a token of my sincere affection.

Your most respectful Brother,

JAMES BONTIUS.

ANIMADVERSIONS

ON

GARCIAS AB ORTA.

On the FIRST BOOK of GARCIAS AB ORTA.

ON CHAPTER III.

*Of Altibt, or asa fœtida, called Hin' by the Javans
and Malaians.*

THE two preceding chapters have so amply treated of amber and aloes, that I have nothing to remark concerning them: but as in this chapter, the author not only denies that ever he had seen the herb, but relates nothing certain of its shape, I here present you with what particulars of asa fœtida I know.

The plant, from the root of which the asa is squeezed out, grows in great quantity in the Persian empire, between the cities Lara and Gamaron, the former of which is not far from the sea, and is frequented by the Dutch and English merchants. This plant is of two kinds. The first is branchy, almost like the water-willow; from the leaves, and twigs of

which, cut off, the *asa foetida* is squeezed out by a press, which, when hardened by the sun, like other juices, becomes of the consistence of aloes.

The other kind of *asa* is far more fruitful, and is the juice pressed out of the roots of the plant, which resemble very thick radishes; but the leaves resemble those of the spurge. I have in my custody some of these roots, which were given me by an Armenian merchant, a friend of mine, who brought them from Persia; and altho' they were dry at the time I received them, yet they had so strong a smell, as diffused itself through the whole house; and to people not accustomed to it, was scarcely tolerable. But the Javans, Malajians, and other Indians, affirmed, that they had never smelled any thing more fragrant. Amongst these, this juice is called *hin'*, and is as much used in dressing meat as the author relates: so that, together with opium, it is the most universal commodity in India. And the India company has always a great quantity of this juice in their store-houses, which the Javans sell to the inhabitants for money or other goods.

On CHAPTER IV.

Of Opium.

IN the second paragraph of this chapter, the author makes mention of opium, called meferi, which he takes to be the Thebaic opium: for the celebrated city Thebes stood in Egypt; and meferi, or by contraction misti, is the name given to Egypt by the Indians.

In the third paragraph he says, that the people who use opium, appear drowsy. But the truth is, that these nations are silly in matters of trade: and in the art of war, they must yield to the Europeans. Were I to expatiate on the qualities of this juice, I would certainly seem to depreciate chymical medicines; I shall therefore only say, that without the assistance of opium and opiates, we never could, in these hot countries, cure either the dysentery, cholera, ardent fevers, or other bilious diseases. And with regard to the celebrated medicines in our own country, theriac, mithridate, and philonium, from what

other ingredient, pray, do we expect the advantageous effects they produce, than the opium which enters their composition? But nothing can be more unjust, than, from the abuse of any medicine, and that not well prepared, to attempt to discredit the proper use of one of the noblest remedies in the shops, often for no reason in the world, or an allegation not confirmed by experience. The poorer sort of Indians extract, from the leaves and twigs of the poppy, a cheaper opium, which they lay in the sun to harden. This drug they call poust; and those who make use of it, are, by way of reproach, termed by the rich pousti, meaning poor or beggarly. The poor again retort upon the rich, by calling them affionii, in ridicule of luxury and delicacies. For affion, or according to some amphion, is, among the Arabs and Indians, the name for the opium of the Greeks: whence I am inclined to think that the word opium has been derived from that nation, which has used it from time immemorial. The Greeks, however, appear to have known only the bad effects of this medicine, and not to have sufficiently investigated its true use, and glorious qualities. Of opium and the crocus

Indicus, or turmeric, I make here a most useful extract, to which, as a sacred anchor, I have recourse in almost desperate choleras, dysenteries, phrenitis, and spasms, which are extremely frequent in this country. But of this I have spoken more fully in my Indian method of cure.

On CHAPTER V.

O Gum Benzoin.

IN the eighteenth paragraph the author says, that the tree producing the benzoin is tall and large. But the benzoin tree here in Java, where the best benzoin is gathered, appeared to my eyes in quite a different light. Nay, it seems a plant (or if you chuse to call it a tree) composed by the union of several fuckers, like the *smilax aspera*, or *fariaparilla*, only that in the benzoin tree the fuckers equal or even exceed the thickness of the arm; so that in the middle the trunk often appears pretty thick, but below and above, the fuckers are evidently separated. It frequently happens, too, that other things of a different species from the benzoin tree are included in this coalition. Therefore, if any person, not acquainted with the tree, should observe the diversity of leaves, he would be surpris'd. But I shall afterwards shew, that the case is the same in the trunk of the aloes tree, or *calamba*: upon cutting the bark of which I have often procured bits of very fragrant benzoin.

As in the 20th paragraph of this chapter the author says that little of the gum is gathered, on account of the number of tygers, although it is foreign to my subject, I shall here add something of that animal. This ravenous wild beast, then, is, alas ! too frequent in the woods of Java, which we find from many deplorable instances of mangled human bodies. For both free men and slaves, who go into the woods in order either to hunt or gather fuel, are immediately attacked by this monster, which, after sucking out their blood, of which it is extremely greedy, at last devours the carcases. Having said that it attacks insidiously, I must point out an error in Pliny, in other things a most sagacious inquirer into nature, who says, b. viii. c. 18. that the tyger is an animal of tremendous velocity; and relates I don't know how many fables of the hunting of its young. But in fact, it is a creature of a slow pace, and can scarcely overtake a man in running, much less a wild beast. Hence boars, wild bulls, and stags, by smelling out this animal, easily elude its pursuit. Therefore, it generally haunts the cataracts, or the low woods on the sides of rivers; whither when the other wild beasts come to drink, it leaps upon

them obliquely, in the manner in which cats attack rats and mice. In the same way it attacks men, and if, as often happens, it should overleap its mark, through too great eagerness of seizing the prey, roaring all the while, it retreats slowly. If it finds itself observed by a man, it will also retire. So that nature has instilled some dread of mankind into this fierce animal: for otherwise we could not live with safety even in our villages and towns.

In May 1630, a tyger was caught near the very walls of Batavia, in the presence of our worthy governour general James Specx, when it roared for some days and nights, to the great terror of the neighbourhood. What relates to the strength of this animal, I shall reserve for another place.

On CHAPTER VIII.

Of Lack.

THE author here speaks of the ants which elaborate the lack. I have only to add, that these ants have wings, are of a purple colour, and that they fly about among flowers, herbs, shrubs, and trees, like the bees, collecting materials for their manufacture. The ants, which have no wings, do not elaborate the lack.

On CHAPTER XIII.

Of Tutty.

GARCIAS ab Orta is here greatly mistaken, when he says that tutty is produced from the ashes of a tree. This information, however, he confesses to have had from hearsay.

It is made of a glutinous earth like clay, which the Indians, who gather it, put into earthen pots made on purpose, much stronger than those in our country; and adding water to it, stir the whole carefully with a stick. Then they place them in furnaces till the water is evaporated. Afterwards, removing the dregs which remain at the bottom, they pick off from the sides of the pots the calcined earth or tutty, which they carefully preserve for sale. It is used in India as a cosmetic for destroying hair, more especially by the women, when they bathe.

The argillaceous earth, of which tutty is made, is found in great quantity in the province of Persia called Kirmon, as I have often been told

by Persian and Armenian merchants, who came here to negotiate business, who, that they may make more profit of tutty, or tutyath, in the Persian language, divide it into the stone and a cheaper powder, which they sell separately, as the purchasers incline.

On CHAPTER XIV.

Of Ivory, and the Rhinoceros.

IN the 10th paragraph, the author confesses that he never had seen the rhinoceros: but I have not only seen him an hundred times in his den, but also wandering through the woods. His skin is of a dark ash-colour like the elephantinum, very rough, with deep plaits on the sides and back. It is so thick as to be impenetrable by a Japan dagger. This beast is not armed with shields (as it is commonly painted); but these plaits counterfeit them: nor is one part of the skin harder than any other. Its snout resembles a hog's, but is more acute: in the extremity of which is the horn, which has procured it the denomination of bellua. The colour of the horn is various, as black, white, or sometimes ash-coloured. The size of its body is nearly the same with that of the elephant, only its legs are shorter; and, on that account, it is not so conspicuous. It is a harmless animal, unless provoked, and not carnivorous like the tyger: but eats herbs and twigs, and these, too, very prick-

ly; for it has a very hard tongue, But if it be exasperated, it will toss up a man and horse like a fly, whom it will kill with licking, while by the roughness of its tongue it lays bare the bones. The Moors eat the flesh of it; but it is very hard, and requires the iron teeth of Plautinus. I shall give you an instance of its ferocity. A person of my acquaintance told me, that one day when he had gone out on horseback, with two men in his company, they found a female rhinoceros rolling herself in the mud, with her whelp; for this animal delights much in dirt, as well as the sow and boar. The beast, upon seeing them, arose, and retreating slowly, pushed the young one before her with her snout; when one of the company rashly pursued her, and, with a dagger, struck her on the back. No blood issued forth; but a little of the skin being cut off, there appeared broad white streaks, which the creature suffered patiently, till approaching a neighbouring wood, she hid her whelp among the brakes. Then turning round, and grunting horridly, it made towards the rider; but by good chance the horse, being frightened, leaped back. The rhinoceros, however, snatched the horse's trappings with its mouth, which being

of filk it tore ; the rider in the mean time flying at full speed, and the rhinoceros sharply pursuing. The persecuted horseman now regained his associates, who, to evade the shock of the furious animal, had posted themselves behind two huge trees, which were scarcely two feet asunder. The impetuous rhinoceros, relinquishing its former object, attacked the companions who were on foot (for they had set their horses a grazing with their legs tied). But whether led by its natural stupidity, or impelled by fury, it sought to push its way betwixt the trees, which it made shake in a terrible manner. Their extraordinary thickness, however, resisted its violence, till the men, recovering from their terror, presented their muskets, and with repeated charges shot the wild beast through the head. Then the Moorish slaves who had come to gather fuel, and been apprised of the event by the rider, effectually killed it with axes, swords, and spears ; while the company, still quaking at their recent danger, inveighed against the temerity of the assailant. Thus happily they escaped the ferocious animal, which, scouring the forests in its agony, spreads ruin and consternation around. But this may suffice of the rhinoceros. All is true which we are told

of the docility of the elephant ; and nothing remains but to remark an error of Pliny and Ælian, who have said that the legs of the elephant are destitute of joints, and inflexible. For while men have articulations only at the knees and haunches, the elephant has them also at the middle of the legs. Moreover (as Plautus well observes) its proboscis serves instead of a hand both in taking its food, and conveying it to its mouth.

On CHAPTER XVI.

*Of Agallochum, or Aloes-wood, called by the Indians
Calambac.*

A Loes-wood is produced not only in the island Sumatra, situate opposite to Java, but grows plentifully, and of the best kind, in Champac, a country bordering on China, and likewise in Cochinchina. And although it is imported thence into Holland without any bark upon it, such, however, is not its native state; but is a consequence of the frequent coalition of stems of various kinds of wood into one tree, as we have observed to be the case in the benzoin. Nor will this circumstance appear extraordinary when we reflect, that trees of different kinds are united together by the art of ingrafting. The inhabitants separate the aloes-wood from the rest in the following manner. When the aloes are cut down, they lay the trunks of them in the slime and mud on the sides of rivers, that the other kinds of wood, become rotten, may separate from the calamba, or aloes. By this preparation the bark is consumed, being not so oily as the wood, which

therefore is less obnoxious to worms and putrefaction, and is brought to us in the same state as to the shops in our country. The aloes-wood is of an aromatic and bitterish taste; whence, probably, it has received its name. A scruple of it in powder cures the cholera, which the natives call mordexi; and excellently heals all cold disorders of the stomach and intestines. It also effectually destroys the tineæ, and ascarides in children. And lastly, it is used at sacrifices, as incense, by the Chinese and all the heathen Moors.

On CHAPTER XVII.

Of Saunders.

IN the third paragraph, our author informs us, that a great deal of the pale and yellow Saunders grows in the island Tymor. Of the extraordinary effects of that wood I shall here relate an account, which was given me by some of our merchants, who went there for the sake of that commodity. In Tymor there is a species of continual and ardent fever, of the kind of the putrid synochus, attended with delirium, and a great alienation of mind. During the exacerbation, which commonly lasts four hours (for although this fever has no perfect remission, yet it has its more violent paroxysms, like a continual tertian) the behaviour of the sick is very absurd; imitating the trade or occupation which they followed when in health, as I have related more at large in my method of cure. They are also molested with a bulimus and insatiable canine appetite, so that they greedily devour any thing which is put in their way, be it ever so nasty: and it is a base custom among the sailors to sport

with this symptom. The inhabitants affirm that this disorder proceeds from the green bark of faunders trees recently cut. For then it sends forth a poisonous sort of vapour which is hurtful to the brain, and quickly produces these effects in people of a bad habit of body, and who use unwholesome diet, such as our sailors.

Before the ax is laid to the faunders trees, it is common to make an incision into the bark, by the smell of which, people who are experienced can determine whether or not they are ripe for cutting. The author farther says, that the fruit of the faunders is nearly equal to the size of a cherry. It is not unlike bay berries: for I have some of it dry, and it stains of a purple and mulberry colour. This fruit is greedily swallowed by a kind of thrush, as are the berries of the ash in our country, which, discharging it again by the belly, plants the hills and vallies with young trees. Hence, although many thousand trees have been cut down both by the Portuguese and us, yet the woods are never run out.

As the author mentions an ointment of the powder of faunders, I shall here subjoin the com-

position of it, for the benefit of young physicians :

R

Ligni santal. optime pulverifat.

Flor. Champac.

Mogori āā m. i. parum contufis adde

Rad. curcumæ ʒii.

Camphor. q. f. ad gratum odorem.

Subigantur fuper planum marmoreum lapide piftilo, addendo fub finem

Ol. nuc. Indicæ recent. q. f. f. unguentum.

With this ointment both the men and Malayan women anoint their bodies all over, and although it gives a dirty colour, from the turmeric which enters into the compofition, yet the fmell of it is very fragrant and wholefome. It allays all immoderate heat of the body, whether occafioned by fevers, or the fun. It removes febrile rigors, and watching; and applied to the region of the ftomach, ftops a cholera, and ftrengthens the bowels.

On CHAPTER XVIII.

Of Betele Pynang & Sirii Poa *.

IN the third paragraph Garcias says, that *they spit out the first juice*, and I think such a precaution is very proper; for, otherwise, the calx, which is mixed with it, would excoriate the gums and palate. It is also to be observed, that if the betele, and arecca without the calx, be chewed, the juice, pressed from it in mastication, is of a green colour: but upon adding a small quantity of calx, the same juice becomes redder than blood. This circumstance of a redness in the spittle led me at first into a great mistake; for I thought it proceeded from an hæmoptoe.

My opinion of the use of these kinds of herbs, I shall now deliver in few words. I hold this masticatory as greatly preferable to tobacco. However, a long and continued use of it (and such is the custom in this country) not only erodes the teeth, by the calx it contains, but even

* These are the Indian or Malabar nut.

causes them to fall out. Nay, I have frequently seen people, who, as yet in their youth, had not a single tooth remaining, by means of the firii pynag, or betele, and arecca with the calx, which the Malaians call the head. Hence you will observe the Javans, and other Indians, have empty spaces in their gums, which the richer sort fill with teeth made of gold. Besides, when the faufel nut, or the fruit of the pynang, which the Javans call pynang mouda, i. e. young, is not ripe, it quickly induces a giddiness of the head. This symptom indeed vanishes on eating a little salt, or taking a draught of cold water : however, there is reason to infer, that a drug, which so immediately affects the seat of the soul, cannot be very salutary to the brain and nerves. To conclude, then, I would admit a moderate use of it, as a dentifrice and sweetener of the breath ; but condemn the abuse of it, as much as of tobacco : for, in my opinion, it is the height of madness to use, as aliment, a substance which has the efficacy of a violent medicine.

On CHAPTER XX.

Of Mace.

BY permission of the governors, there are brought to this and the circumjacent islands, from Banda, large earthen pots, full of nutmegs preserved in vinegar and salt. These nuts, macerated for a day or two, and afterwards gently boiled, we preserve here with sugar.

It is to be remarked of the preserved bark of this nut, and also of the nut itself, that they ought to be sparingly used in this country; because the oily and fat vapours which they raise up to the head, produce obstructions in the ventricles of the brain; hence, occasioning sleepiness, and even a stupor of all the members of the body. And farther, I have seen some persons, who, from eating too much of this nut, have lain more than a whole day without the least degree of sense or motion, as if they had been in a carus; a manifest proof that the brain and nervous system were

not a little affected. Besides, the inhabitants of Banda, and even some of our people, boil a pulse of the green bark of the nutmeg, which is not unflavoury, and in taste resembles the dish made in Holland of boiled apples : but I have been ingenuously told by those who have eat of it, that they actually were affected with the stupor and sleepiness above mentioned.

On CHAPTER XXII.

Of Pepper.

PEPPER is produced not only in Malabar, as the author says in the 10th paragraph, but in great quantity, likewise, in the kingdom of Java, especially the province of Bantam. It also grows plentifully in Sumatra, which has a prince of its own, not subject to the king of Achin, who is the most powerful potentate in the island: whence our ships import of it twice or thrice a year.

What our author tells us, in paragraph 11th, of the green clusters of pepper being pickled with brine and vinegar, is true. And as there will be occasion to mention it afterwards, I shall just observe here, that the Indians call that pickle by the general name achar. In the same way are preserved green ginger, the roots of galangal, and the clusters of cloves; also, young cucumbers, which the Portuguese call agureas; besides mangos, with onions, garlic and leeks: and

certainly nothing can be more proper in these places, both to excite an appetite, and promote digestion. As on account of the heat and moisture of the air in this climate, the parts under the head, particularly the lungs and stomach, are infected with catarrhs, the native broom of the country, with Persian and Surat capers, supply remedies for that purpose.

In paragraph 12th of the same chapter, the author relates the ridiculous opinion of the Indians concerning the quality of pepper; but of that I have formerly taken notice.

On CHAPTER XXIV.

Of Cardamoms.

IN the sixth paragraph of this chapter, Garcias ab Orta has committed a great mistake, when he says, that the pods of the pease hang down from the branches : For I, who have seen the cardamom grow in great quantity a thousand times, can affirm that it resembles reeds. Not only is it similar to that plant in the stem, which is divided by joints, and inwardly spongy, not hollow, but also in the leaves ; only that they are not so much sharpened at the top, like a pyramid, but rather resemble a cone. The pods grow in this manner. An ear, at first green, springs forth from the root, like that of the nard ; which, opening, discloses flowers resembling the broom-lime, except that they are mixt of a white and clay colour, of an aromatic and very fragrant flavour. When the ear ripens, it puts on the colour of harvest wheat, and within it are treasured the pods containing the seed, which is of a greenish white colour, beautifully intermixed with purple spots. On

becoming dry, it assumes the scarlet colour, in which it appears in the shops. But elsewhere, *in my exotic Indian plants*, I shall give you the history of it, together with an accurate plate, which I have the honour of being the first who attempted. The seed of the cardamoms affects the palate with a mild and agreeable heat : and I am of opinion, that of all the aromatics, it is the most beneficial to the stomach and breast ; for it leaves no empyreuma in the mouth or bowels, like the rest of that tribe.

On CHAPTER XXVI.

Of the Cocoa Nut.

CHARLES CLUSIUS, in his annotations upon this chapter, relates, that the Indians write their letters upon the leaves of this palm by means of an iron style. And this they perform so artificially as to excel even the most elegant writers among us. When I have beheld with what correctness the Indian characters (which are Arabic) have been delineated on these leaves, my indignation has sometimes been excited against our Europeans, and especially my own countrymen, who scarce ever value any thing but their own, and will call these people barbarians, although they can express their meaning much more laconically, in a few significant characters, than ours with all their drawling periods, and superfluous multiplicity of words. And farther, notwithstanding the government of Java may appear to be despotic, yet so happily is it conducted for the exigencies of the nation, that any person, who is not perfectly stupid and insensible, may soon be convinced, that the compendious system of policy in this country is, that kings shall govern well, and subjects obey still better.

On CHAPTER XXVII.

Of Myrobalans.

I Have frequently seen the fruit called in Europe, the emblick, and bellerick myrobalans, grow here in Java : and beside the common kinds, have also seen another, unknown in our country. It is of a round figure, small and equal, without channeling or notches. It resembles the other myrobalans, however, in the trunk, leaves, and taste, only partakes not of their purgative quality, and is somewhat more astringent upon the palate. These myrobalans are in daily use with us in the hospitals, for those who are ill of a dysentery, or cholera. In bilious, febrile heats, they are also of great advantage; and what crowns their perfections, they excellently resist putrefaction.

ON CHAPTER XXVIII.

Of Tamarinds.

IN the fourth paragraph, Gracias ab Orta observes very justly, that the leaves of the tamarinds are minutely notched, and resemble the shape and colour of the white chiches. He adds, with equal justice, that they are good against the erysipelas, being astringent, drying and cold. In taste, they exactly resemble wild sorrel; whence they are highly useful in dysenteries and choleras.

ON CHAPTER XXIX.

Of the Pudding-pipe Tree.

I Have scarce any thing else to remark upon this chapter, than that when the author mentions the places where the casia grows, he has omitted Java, in the woods of which it is produced in great abundance. Much use is made of this pulp, among the Malaians, in disorders of the urinary passages, as also in an infected gonorrhea, with the addition of a little powder of boiled turpentine. However, I would not venture to exhibit it in the true dysentery, which is here extremely frequent, nor in the cholera, without great caution; because, like manna, it is easily converted into bile, and therefore, would render more mortal a disease of itself exceedingly dangerous.

In the same chapter, a ridiculous opinion is related; namely, that the cows here labour under a continual looseness, by feeding on the leaves of

the casia tree, &c. But in my opinion, the real cause of this flux is, that the places situate under or near the equator, are covered with a hot and moist atmosphere, as I have elsewhere remarked, which exciting putrefaction in the bowels, induces fluxes of the intestines and liver.

On CHAPTER XXXII.

Of Calamus Aromaticus, or the Sweet Flag.

BESIDE the many important medicinal purposes for which calamus aromaticus is employed, it is used by the Malaian women in their kitchens, for dressing fish and flesh, together with the roots of ginger, turmeric, galangal, and other aromatics, to give a flavour and relish to their food, and assist digestion. And here by the way, let me observe that these nations, though called barbarous by the people of our country, excel both the Poles and Germans in pickling fish, who have the assurance, however, to arrogate the superiority in that article.

The author says, that calamus aromaticus is neither galangal nor acorus: very well indeed, seeing that the acorus and galangal ought, by the character of their leaves, to be referred to the corn flag; and calamus aromaticus is a species of the corn flag.

On CHAPTER XXXIII.

Of Nard.

THE Indian nard grows in great quantity in Java, and is used in the kitchen for the same purposes with *calamus aromaticus*, and the sweet-smelling rush; namely, in seasoning their broths. I have never yet seen a green plant of the nard as it grows on the mountains about fourteen leagues from the city of Batavia. For we cannot venture on such an excursion on account of the Javan robbers, and tygers. We here infuse the nard in vinegar, in the manner of dry marygold leaves in our country; of which we afterwards make a syrup, extremely advantageous in cold affections of the bowels, as in obstructions of the liver, spleen, and mesentery; the last of which are so frequent in this country, that many people die of a mortal marasmus, incurred from that cause, without any pain, however, as I have remarked in my method of cure. I am certain that vinegar, and this syrup of nard, either taken inwardly, or externally applied, is of great efficacy against the bites of venomous creatures, as

serpents, the scolopendra, scorpions, and the like. This I discovered by an experiment upon a person who was bit by the serpent which the Portuguese call Cobra de Capello, *the hooded snake*; the bite of which is so venomous that the Portuguese actually regard it as the basilisk. But of that I shall speak afterwards.

I shall add nothing farther of the sweet-smelling rush, than that the author is mistaken, who says, that the Indians make no other use of it than bedding their horses, when it is even used for seasoning food, as the calamus aromaticus. Wherefore, although it grows plentifully in the woods, it is carefully cultivated in the gardens by the Maldivian women, and is highly beneficial against female disorders, in baths and fomentations. And as it is a species of grass, of which even the most common kind is celebrated for medicinal qualities, who can deny that this manifestly aromatic grass possesses far more estimable virtues?

On CHAPTER XXXV.

Of Costus.

IN this chapter the author asserts, that there is only one kind of costus, which I also affirm. For the distinction of three kinds, into which it was divided by the older physicians, had been owing to the different appearances of the same costus, which grows carious by age. The roots of costus are brought here from Cambodia in great quantity, as it is a medicine much used by all the Indians, and particularly the Chinese. It is called by the Indian merchants Pucho, and by the Chinese Potliok. This costus has all the characters of that described in this chapter. When I first saw the root of the costus, I imagined it to be the white hellebore; and I should still have been of that opinion but for the smell; because, when the root of the costus is cut through the middle, you will perceive the beginning of as many fibres as are in the hellebore. That this root is adulterated, as the author says, I do not believe. For I have seen a whole picol, which contains an hundred and twenty pounds, sold by auction for ten reals.

The author, in another chapter, bestows many deserved encomiums on the China root. I shall only add to them, that this root, beside being of use in venereal affections, is advantageous in all chronic diseases, which are prevalent, as the cachexy, leucophlegmatia, dropsy, and in the species of palsy called the barbiers; as I experienced in myself, as well as others, when I was ill of that disorder four months, and, before I began the use of the China, could not move my legs or arms, but with difficulty.

On CHAPTER XXXIX.

Of Indian Saffron, or Turmeric.

THE Indian saffron, which the author here describes, is nothing else than the root called Turmeric in our country. It grows so plentifully in the woods, that ships might be loaded with it; notwithstanding which it is cultivated in the gardens. It has an oblong leaf, broader than that of the cardamom, to which it is otherwise not unlike. In the stem, however, it is different; the cardamom being divided with joints, as a reed, but the turmeric small and equal. I am surprised that Garcias ab Orta has said so little of this noble plant, as it is the most used of any in all India. It has got the name of saffron, not for having any similitude to that of England, which is the best in the world; but because the root of it, like the true saffron, tinges of a yellow colour.

The Portuguese call it Saffran da tierra; which is to say, subterraneous saffron. The Malaians call it Borbory. It has a beautiful purple flower,

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which makes its appearance at the top of the plant, and resembles that of the corn-flag. I will be answerable that what he says, towards the end of the chapter, of his being of opinion that the root of the curcuma may be taken inwardly without any detriment, ought to be changed into, boldly taken : for there is no other preserve so much used by the Indians in dressing their food. Besides, it is of the highest utility, as a medicine, administered not only topically, but internally, in all obstructions of the bowels and mesentery, so frequent in this country ; in complaints, likewise, of the urinary passages. In female disorders, no medicine is so much celebrated by the Malayan women as borbory. In facilitating the birth it is a sovereign remedy : in complaints of the uterus it is specific. And to confirm this opinion by my own experience, I have in reality found nothing so beneficial in all the disorders above-mentioned, as this most excellent remedy.

On CHAPTER XL.

Of Galangal.

AS the author, in this chapter, has treated sufficiently of galangal, I have nothing farther to observe, than that the root of it is used in the same manner with that of green ginger, and to excite an appetite, as capers. I formerly observed that this root, when made in a pickle with brine and vinegar, is called by the inhabitants achar.

On CHAPTER XLIV.

Of Snake-Wood.

IN this chapter, the author recommends snake-wood as beneficial in the paroxysms of intermitting fevers: and I myself have oftener than once experienced the advantage of such practice, especially in the fever of Tymor, attended with delirium and phrenitis. The snake-wood is extremely close in its texture: therefore, when the Indians use it, they rub it strongly with water upon a piece of marble, in order to bruise it, and then administer it to the sick in water, or any other liquor. In taste, it is far more bitter than the aloes. It is good against the tinea and ascari-des, and is a powerful antidote against the bite of venomous creatures.

In the third paragraph, mention is made of the serpent which the Portuguese call Cobra de capello. That serpent, when irritated, displays upon its neck two puffed up tumours, of a yellow colour, like what the frogs push forth when they

croak : and perhaps these bullæ, or tumours, raised in our author's mind the idea of a crown. This serpent is not much thicker than a man's little finger ; with its back of a black colour, and its belly of a dirty yellow.

What is related, in the following paragraph, of a battle betwixt a ferret and this serpent, is not improbable, as I have seen snakes of this kind killed by cats ; who, notwithstanding, never eat of their flesh, although they greedily devour other kinds of serpents, especially the aquatic. The following anecdote may prove the poisonous nature of this species of serpent : I saw a Moor who had been cutting some of the reeds which the Indians call *rottang*, and which serve them instead of ropes. He was bit in the thumb by one of these serpents. The mark, however, was scarcely perceptible. To prevent the venom from making its way far into the body, a very tight ligature was put round his arm, which occasioned such intolerable pain, as to oblige it to be slackened. The poor man immediately expired, and his body swelled in a hideous manner. So instantaneous, on reaching the heart, were the effects of the virulent poison.

On CHAPTER XLV.

Of the Bezoar Stone.

IN the second paragraph of this chapter, the author says, that within the true bezoar stones there is chaff, or some such substance: and that, if on the outer coat being abraded, there succeeds not another circle in the manner of an onion, till the chaff be laid bare, the stone is certainly factitious. But the adulteration of it may be better discovered by the following methods. If you rub the stone with a little lime, and the part so rubbed should appear of a red colour, it is certain that the stone is genuine. Again, if after carefully weighing the stone, you put it into a basin of water, and when it has remained there two or three hours, you try it a second time in the balance, and find that it is neither increased nor diminished in its weight, it is the true bezoar stone. But, if on being rubbed with lime, it should betray any rift; or, when taken out of the water, should be found either increased or diminished in

weight; you may confidently declare it to be factitious.

In the sixth paragraph, Garcias says, that the bezoar is produced not only in Persia, but other places there mentioned: however, since no body, as far as I know, has hitherto given the origin of that stone, nor described how, or in which way it is produced, I shall here deliver a short account of it. The Persians, then, call this stone pa-zahar, a word compounded of pa and zahar; the first of which signifies *against*, and the second *poison*, and, when joined together, are equivalent to the Greek derivative *antidote*. We may here see the falshood of those etymologists, who would deduce the name of this stone from pazar or bazar, when such a stone was never seen to be sold. The bezoar stone is produced in Persia in the manner I am about to relate, as I have been assuredly informed by Persian and Armenian merchants of credit.

There is a place in Persia, called Habanon, at the distance of three days journey above Lara, a famous market town, where there grows an herb very much resembling saffron and hermodactyls.

Many flocks of goats are used to pasture in the same fields, in the stomachs of which, from eating this herb, these stones are generated; which are so much valued, by the kings of Persia, above what are produced in other places, that the great Xa Abas, the last emperor of the Persians, who died in 1628, ordered watchmen to be placed there, to preserve for him all the bezoar stones exceeding a certain weight. For this origin of the bezoar, I have not only the testimony of the Persian and Armenian merchants, but also of P. Texeira, a Portuguese, who, in an elegant treatise in the Spanish language, on the history of the kings of Persia, relates that there is an island between Ceylon and the Coromandel coast, which the Portuguese call *Isla de Vacas*, the Isle of Cows, known also to our pilots, where there is likewise produced a great quantity of bezoar stone, by goats which are kept there for the purpose. And the same author relates, that in the year 1585, when a terrible deluge overflowed the Coromandel coast, and the *Isla de Vacas* in particular was wholly covered with water, such of the goats as were saved by transportation, gave over breeding the bezoar stones, as

the place whither they were removed afforded none of the herb which produces them: but a few years afterwards, when the island resumed its usual verdure, and the goats were re-imported to browse on their wonted food, they produced the stones as before.

I thought proper to relate these facts, as they are confirmed both by our own and the English merchants. With regard, however, to the hyperbolical virtues, and strange efficacy, attributed to these stones, a thousand instances will justify my detraction. Besides, I am not by nature so prone to credulity, as easily to admit the superstitious accounts of medicines, till I find them confirmed by experience. But you may believe as a truth, that these stones occasion as much uneasiness to the goats, as those of the kidneys and bladder to men. These goats are not much unlike the European, except that their horns are longer, and erect. The skins of some of them are beautifully spotted like the tyger, of which kind we have two in the fort of Batavia. The goats step with more or less ease, according to the size and number of the stones which they

contain ; a circumstance well known to the cunning Armenians and Persians. I have also seen Pa-zahar stones bred in the stomachs of apes. They are of a tapering shape, sometimes longer than the finger, and esteemed the most valuable of all.

On CHAPTER XLVI.

Of the Hog-Stone.

THE Malacca stone, which the author here cursorily mentions, recalls to my remembrance another sort of concretion generated in the gall of hogs, and also in the stomachs of porcupines with long feathers. The Portuguese call this stone *Piedra de Puerco*. It is soft and fat to the touch, like Spanish soap. I have two of them in my custody ; one taken out of a porcupine, and the other from a boar. This stone is infused in wine for the cholera, which the Islanders call *Mordexi*, and regard with as much horror as the Dutch do the plague, on account that it sometimes kills people in a few hours. This stone, however, is dangerous to pregnant women, and may occasion abortions : for I have been told by the Malaian women, that when their menstrual purgations proceeded not rightly, and they only held this stone in their hand, they have found benefit from it. But really, when I reflect on the opinion of mankind, concerning these stony concretions in the stomachs and cavi-

ties of creatures void of reason, it appears to me very unaccountable, that the stones found in the human bladder and kidneys, and those which are discharged with the urine, should be held in no estimation; seeing that man is a much nobler animal, and lives on more delicate food. It is certain that there are circles in these concretions, resembling what are found in the bezoar. When you rub the external surface, it is soft and friable (which is also the case in the bezoar) till you arrive at a small nut in the centre of these circles, which shows evidently by the redness of its colour, that it derived its origin from the kidneys. I shall say nothing farther of these concretions, lest I should appear to depreciate the bezoardic stones, and encourage lithotomists to a dangerous zeal for operations. This, at least, I know, that the stone found in the human bladder, greatly promotes urine and sweat. I remember to have exhibited it in 1624 and 25, in a scarcity of the bezoardic stone, during the terrible plague which ravaged my native Leyden, and the other cities of Holland: and I positively affirm, that when mixt with theriac, or mithridate, and a few drops of the oil of amber, or juniper, I found it

a more excellent and efficacious sudorific than that celebrated cordial *.

* Physicians of the present age will readily admit that a diaphoresis might be produced by these medicines, without attributing the smallest effect to the human calculus which entered into the composition. It is indeed surprising, that a person, who intimates so strongly his opinion of the futility of the Bezoar stone, in opposition to the reigning prejudice of his time, could sink into the weakness of imagining any superior quality in a substance of equal insignificance. But the fashion in physic countenanced the most capricious conceits; and such anecdotes, while they amuse the reader, serve to guard against the whimsical extravagance in which the understandings even of the judicious have been lost.

ANIMADVERSIONS

ON THE

SECOND BOOK of GARCÍAS AB ORTA.

On CHAPTER I.

Of the Tree called Pariz.

THE Portuguese give this shrub the name of Arvore da Noite, because it expands its flowers in the night. These are copiously produced in Java, and brought to market by the slaves, for making chaplets, and wreathing in the hair of the Malaian women.

In the sixth paragraph the author speaks of the flowers called Sula Mogori. These flowers grow upon a copse not unfit for making hedges. It scarcely exceeds the height of a man, and produces flowers extremely fragrant and beautiful. A distilled liquor is made of the flowers of the tree pariz, and this shrub, which is very cordial, and therefore affords extraordinary assistance

in the faintings frequently attending continual fevers, the cholera and dysentery.

The author afterwards mentions the flowers he calls Champe, but which the Javans name Champacca, together with the tree that produces them. The leaf of this resembles that of the peach-tree, but is somewhat more thick. The flowers are of various colours ; for some are of a pale green, so that when first taken from the tree, they seem like a little bundle of leaves ; but the stamina in the calyx, which are nearly such as in the rose, evince them to be flowers. Others of them are of an orange colour. All the flowers are equally odoriferous, but affect the head with heaviness, as camphire does those who are unaccustomed to it. The author also says, that the Indians are greatly addicted to perfumes. He might have added all the Mahommedans. So that you can scarcely ever see any Indian women go abroad, without a chaplet of these flowers on their heads, or wreathed in their hair, to render them more agreeable to their husbands, and often their lovers.

ON CHAPTER III.

Of Negundo and Lagondi, or Eastern Privet.

THIS shrub is well described by Prosper Alpinus, under the name of Egyptian Privet, and Alcanna ; and certainly it much resembles it in the leaves. But its branches stretch farther out, like our water-willow ; and the berries, which succeed the flowers, are not so numerous as those of the privet, or whortles. When ripe they are black ; and the colour of the flowers is various, while the flowers of this Indian privet are of a pale blue ; and those of the privet in Holland more white than snow : whence Virgil,

Alba ligustra cadunt : Vaccinia nigra leguntur.

For the whortles are the berries of the privet. This shrub is likewise more fragrant than the privet ; on which account it is deservedly ranked among the aromatics. That Prosper Alpinus confounds this privet with the alcanna, might

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arise from their being considered indiscriminately in Egypt. For the leaves of the alcanna are similar to those of the privet, only somewhat less. Besides, the leaves of the alcanna stain of a beautiful red colour, if they are bruised with a little lime, upon marble, and macerated a night in water. With this paint, the Javans of both sexes stain their nails and lips; and the Persians and Turks elegantly dye the tails of their horses with this red colour. Both shrubs grow in Java. They are carefully cultivated in the gardens, and held in so much esteem by the Indian nations, that they are used in almost all diseases, in baths, fomentations, and poultices. Nay, they look upon them almost as divine: and certainly they well supply the want of melilot and camomile in this country. I am confident that a better discutient than the leaves of these shrubs is not to be found: and in all pains, even those which are inveterate, they are highly anodyne. A fomentation of them promotes the menstrual discharge, facilitates the birth, and cures all disorders of the uterus. Inwardly taken, this medicine provokes urine, affords relief in complaints of the kidneys and bladder,

and affuages the pains of the cholic. In a word, the panacea of the antients was nothing to this of ours. The author calls this shrub Negundo, and Niergundo ; but the Javans name it Lagondi.

On CHAPTER IV.

Of the Jaaca Fruit.

BESIDE the species of jaaca here described, there likewise grows another in Java, on a very high and thick tree, with leaves resembling those of the plane, but much greener, and not covered with down. It bears fruit far less than the other Jaaca, and not of the same kind, but of somewhat a finer taste, which hangs not from the trunk, but the branches. This fruit is nauseating, and, as the author observes, unwholesome.

On CHAPTER V.

Of Jangomas.

THE jangomas are a species of the floe-tree, or black thorn, such as in Holland we call Sleen. When ripe they are of a yellow colour; whereas ours are of a dark purple. The jangomas have a very astringent taste. The plant grows to near about the height of a cherry-tree, and is prickly; whence Prosper Alpinus called it Paliurus; as Virgil says,

Carduis & Spinis furgit Paliurus acutis.

In respect of quality this fruit is cold and dry; and is therefore of advantage in the cholera, dysentery, and ardent fevers; the heat of which it allays, and restrains the orgasm of the bile. Whence we here make a syrup of it, no less useful than the juice of acacia, so much celebrated by the ancients.

ON CHAPTER XV.

Of the Carambola.

I Am surpris'd that Garcias ab Orta has given so slight a description of this tree, as the fruit which it produces deserves to be ranked among the most wholesome in India. The leaves of it are somewhat similar to the prune, and underneath are white like the poplar. It bears flowers of a beautiful pale red, the size of which, as contained in clusters, is about equal to that of the flowers of the pimpernel. When the flowers fall off, they are succeeded by oblong quadrangular pods, a pentagonal space often intervening betwixt the different parts, as in the pods containing the seed of the *corona imperialis* of Clusius. The taste of this fruit is subacid and astringent. Before maturity, it is pickled with brine and vinegar, as we have observed of other kinds. A syrup is also made of it, which, like that of billingbing, is of advantage in the chole-

ra, dysentery, and ardent fevers ; for which purposes it is preserved with sugar by the Chinese. The fruit, when ripe, is of a yellowish colour, and sweet vinous taste.

F I N I S.



